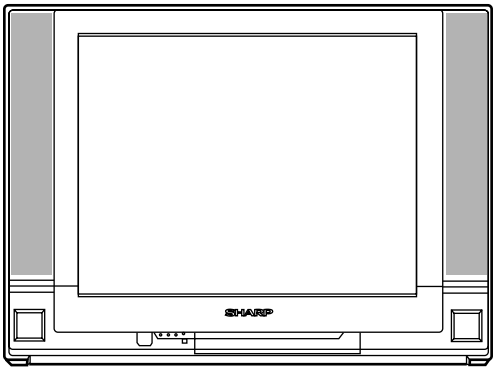
# SHARP SERVICE MANUAL

SY0M8CX68KF5/



## COLOUR TELEVISION

***Chassis No. NFC***

## MODELS CX68KF5 SX68KF7

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

### FEATURES

- 100 CH Program Memory
- AV Mode (Standard/ Dynamic/ Soft)
- CATV Hyper Band Ready
- PAL/NTSC 3line Comb Filter
- ON/OFF Velocity Modulation
- Black Stretch Circuit
- Picture Noise Reduction
- White Temp. Select
- Aperture Control
- IGR-B/G (Only SX68KF7)
- Bass+
- Multi Language (English/Chinese/Russian/French/ Malay/Arabic)
- ON/OFF Reminder Timer
- Power Save Mode
- Rear AV-In 1 & 2, S-Video In, AV Output (Monitor Out), Headphone and Front AV-In 3

### CONTENTS


| | Page |
|---|---|
| • SPECIFICATIONS | 2 |
| • IMPORTANT SERVICE NOTES | 2 |
| • ADJUSTMENT PRECAUTIONS | 3 |
| • TROUBLE SHOOTING TABLE | 16 |
| • CHASSIS LAYOUT | 21 |
| • BLOCK DIAGRAM | 22 |
| • WAVEFORMS | 35 |
| • DESCRIPTION OF SCHEMATIC DIAGRAM | 36 |
| • SCHEMATIC DIAGRAM | |
| ■ CRT UNIT | 37 |
| ■ MAIN UNIT (CX68KF5) | 38 |
| ■ MAIN UNIT (SX68KF7) | 42 |
| ■ POWER UNIT | 46 |
| ■ OPERATION UNIT | 48 |
| ■ IGR UNIT | 49 |
| • PRINTED WIRING BOARD ASSEMBLIES | 50 |
| • SOLID STATE DEVICE BASE DIAGRAM | 58 |
| • REPLACEMENT PARTS LIST | |
| ■ ELECTRICAL PARTS | |
| MAIN UNIT | 59 |
| POWER UNIT | 64 |
| CRT UNIT | 67 |
| IGR UNIT (SX68KF7) | 67 |
| OPERATION UNIT | 68 |
| ■ SUPPLIED ACCESSORIES | 69 |
| ■ PACKING PARTS | 69 |
| ■ CABINET PARTS | 69 |


### WARNING

**The chassis in this receiver is partially hot. Use an isolation transformer between the line cord plug and power receptacle, when servicing this chassis. To prevent electric shock, do not remove cover. No user – serviceable parts inside. Refer servicing to qualified service personnel.**

SHARP CORPORATION

# SPECIFICATIONS

| | |
|---|---|
| Power Input | AC 220 - 240V, 50 Hz |
| Power Consumption | 158 W (CX68KF5) |
| | 163 W (SX68KF7) |
| Convergence | Self Convergence System |
| Focus | Bi-Potential, Uni-Potential Electrostatic |
| Sweep Deflection | Magnetic |
| Intermediate Frequency | |
| Picture IF Carrier | 38.9 MHz |
| Sound IF Carrier | |
| 5.5 MHz | 33.4 MHz |
| Colour Sub-Carrier | |
| PAL | 34.47 MHz |
| Audio Power Output Rating | 10W × 2 (Max) |
| Speaker | |
| Size | 12 × 8 cm × 2 pcs. |
| Aerial Input Inpedance | 75 ohm Unbalanced |
| Receiving Channels | |
| PAL-B/G | |
| VHF | E2 thru E12 |
| UHF | E21 thru E69 |
| CATV | X thru Z + 2, |
| | S1 thru S41 |
| Receiving Frequency | |
| VHF | 44.25 MHz thru 423.25 MHz |
| UHF | 431.25 MHz thru 863.25 MHz |
| Dimensions | Width : 800 mm |
| | Height : 583 mm |
| | Depth : 512 mm |
| | Weight (Approx) : 47.0 kg |

***Specifications are subject to change without prior notice.***



# IMPORTANT SERVICE NOTES

**Maintenance and repair of this receiver should be done by qualified service personnel only.**

## SERVICE OF HIGH VOLTAGE SYSTEM AND PICTURE TUBE

**When servicing the high voltage system, remove static charge from it by connecting a 10k ohm Resistor in series with an insulated wire (such as a test probe) between picture tube dag and 2nd anode lead. (AC line cord should be disconnected from AC outlet.)**

1. **Picture tube in this receiver employs integral implosion protection.**
2. **Replace with tube of the same type number for continued safety.**
3. **Do not lift picture tube by the neck.**
4. **Handle the picture tube only when wearing shatterproof goggles and after discharging the high voltage completely**

## X-RAY

**This receiver is designed so that any X-Ray radiation is kept to an absolute minimum. Since certain malfunctions or servicing may produce potentially hazardous radiation with prolonged exposure at close range, the following precautions should be observed:**

1. **When repairing the circuit, be sure not to increase the high voltage to more than 34.0 kV (at beam 0 μA) for the set.**
2. **To keep the set in a normal operation, be sure to make it function on 30.0 ±1.5 kV (at beam 1,800 μA) in the case of the set. The set has been factory – Adjusted to the above-mentioned high voltage.**
   **∴ If there is a possibility that the high voltage fluctuates as a result of the repairs, never forget to check for such high voltage after the work.**
3. **Do not substitute a picture tube with unauthorized types and/or brands which may cause excess X-ray radiation.**

## BEFORE RETURNING THE RECEIVER

**Before returning the receiver to the user, perform the following safety checks.**

1. **Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the receiver.**
2. **Inspect all protective devices such as non-metallic control knobs, insulating fishpapers, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacity networks, mechanical insulators and etc.**

# ADJUSTMENT PRECAUTIONS

This model's setting are adjusted in two different ways: through the $I^2C$ bus control and in the conventional analog manner. The adjustments via the $I^2C$ bus control include preset-only items and variable data.

## 1. Setting the service mode by the microprocessor.

① Make a short-circuit JA373 and JA374, enter into the service mode. (Adjustment through the $I^2C$ bus control). (Use JWS Key to set as well).
② Press the CH DOWN / UP key on the remote controller to get ready to select the mode one by one.
③ Press the CH DOWN / UP key on the remote controller to select the modes reversibly one by one.
④ Using the VOLUME UP/ DOWN key on the remote controller, the data can be modified.
⑤ When the short circuit between JA373 and JA374 is cut off, it will be released from the service mode.

## 2. Factory Presetting.

① Make a short-circuit JA373 and JA374 and turn on the main power switch. Initial values are automatically preset, only when a new EEPROM is used (Judge with the first 4 bytes).
② The initial data are preset as listed in page.
③ Make sure the data need modify or not (Initial data).

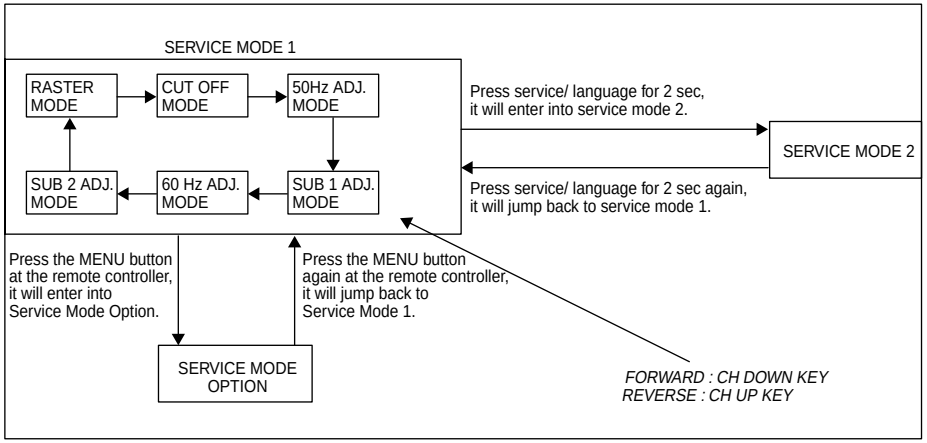
**Note: Once the chassis has been assembly together and ready to be POWER ON for the FIRST TIME, make sure to make a short-circuit JA373 and JA374 to switch to the service mode position first and then turn on the main power switch. (See 2-1 above).**

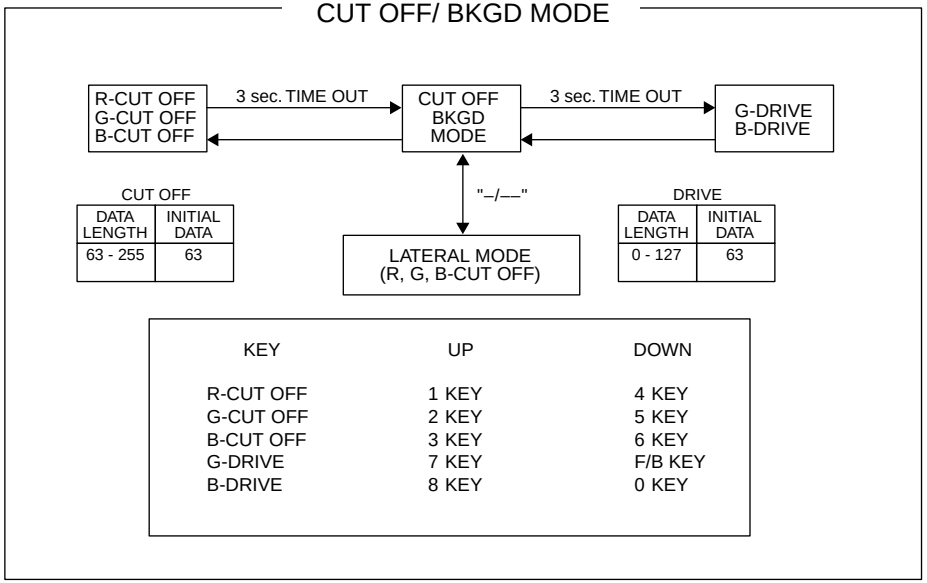
**Precaution: If haven't done this initiation, it may possibly generate excessive Beam current.**



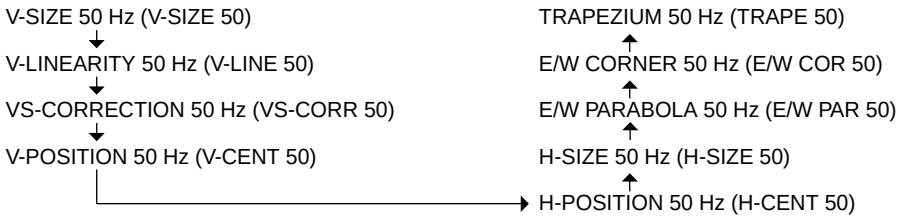
# SERVICE MODE

1.) In the Service Mode, Key is used to select the mode in the following order.

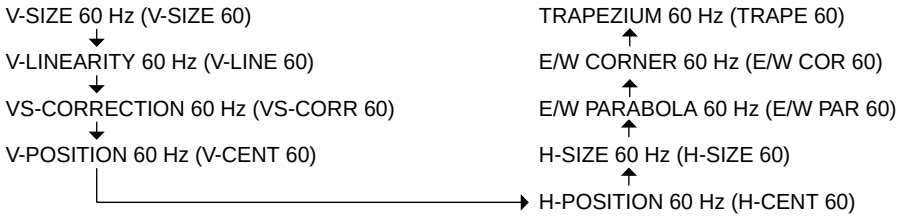

SERVICE MODE 1
RASTER MODE
CUT OFF MODE
50Hz ADJ. MODE
SUB 2 ADJ. MODE
60 Hz ADJ. MODE
SUB 1 ADJ. MODE
Press service/ language for 2 sec, it will enter into service mode 2.
SERVICE MODE 2
Press service/ language for 2 sec again, it will jump back to service mode 1.
Press the MENU button at the remote controller, it will enter into Service Mode Option.
Press the MENU button again at the remote controller, it will jump back to Service Mode 1.
SERVICE MODE OPTION
FORWARD : CH DOWN KEY
REVERSE : CH UP KEY



**50 Hz ADJ. MODE**


V-SIZE 50 Hz (V-SIZE 50)
V-LINEARITY 50 Hz (V-LINE 50)
VS-CORRECTION 50 Hz (VS-CORR 50)
V-POSITION 50 Hz (V-CENT 50)
H-POSITION 50 Hz (H-CENT 50)
H-SIZE 50 Hz (H-SIZE 50)
E/W PARABOLA 50 Hz (E/W PAR 50)
E/W CORNER 50 Hz (E/W COR 50)
TRAPEZIUM 50 Hz (TRAPE 50)

**60 Hz ADJ. MODE**


V-SIZE 60 Hz (V-SIZE 60)
V-LINEARITY 60 Hz (V-LINE 60)
VS-CORRECTION 60 Hz (VS-CORR 60)
V-POSITION 60 Hz (V-CENT 60)
H-POSITION 60 Hz (H-CENT 60)
H-SIZE 60 Hz (H-SIZE 60)
E/W PARABOLA 60 Hz (E/W PAR 60)
E/W CORNER 60 Hz (E/W COR 60)
TRAPEZIUM 60 Hz (TRAPE 60)

4

**SUB 1**

| | |
|---|---|
| SECAM R-Y | (SCM R-Y) |
| SECAM B-Y | (SCM B-Y) |
| BRIGHT | (SUB BRI) |
| BRIGHT (DVD) | (SUB BRI DVD) |
| SUB CONT | (SUB CONT) |
| SUB CONT (DVD) | (SUB CONT DVD) |
| SUB TINT | (SUB TINT) |
| SUB TINT(DVD) | (SUB TINT DVD) |

FORWARD : CH DOWN KEY
REVERSE : CH UP KEY

**SUB 2**

| | |
|---|---|
| SUB COLOR | (SUB COLOR) |
| SUB COLOR (DVD) | (SUB COLOR DVD) |
| V-ENT | (V-ENT) |
| H-ENT | (H-ENT) |
| RF AGC | (RF AGC) |
| SECAM BELL | (SCM BELL) |
| SPRIT/INTER | (S/I) |
| RF SUB SOUND | (RF S-SOUND) |
| HEADPHONE SUB VOLUME ADJ. | (HP SUB VOL) |
| COLOR TEMP. | (WT) |
| PIFVCO | (PIFVCO) |
| LNA | (LNA) |



# SERVICE MODE

User Data in Service Mode Option

- While SERVICE MODE 1 on, EEPROM DATA will switch to the service data. Also, once press the menu button at the remote controller, EEPROM will switch to SERVICE MODE OPTION.
  Once press the menu button again at the remote controller, EEPROM will switch back to SERVICE MODE 1.
- In the service option the user data establish as below,

Service Mode Option

| No. | EEPROM ITEM | DATA LENGTH | OSD | IC | DATA SETTING | INITIAL DATA |
|---|---|---|---|---|---|---|
| 1 | COMB OPTION | ON/OFF | COMB OP | OPTION | | ON |
| 2 | DVD OPTION | ON/OFF | DVD OP | OPTION | | ON |
| 3 | PAL OPTION | ON/OFF | PAL OP | OPTION | | ON |
| 4 | 6.5 M SIF FIX | 0 ~ 1 | 6.5 M | 1 CHIP | 6.5 M SIF FIX (0) | 0 |
| 5 | ROTATION OPTION | ON/OFF | ROTA OP | OPTION | | OFF |
| 6 | SYAKIT OPTION | ON/OFF | SYAKIT OP | OPTION | | OFF |
| 7 | SPATIALIZER OPTION | ON/OFF | SPA OP | OPTION | | OFF |
| 8 | FLAT OPTION | ON/OFF | FLAT OP | OPTION | (ON:FLAT) | ON |
| 9 | SPEAKER | 1 ~ 4 | SPEAKER | OPTION | SP1 (1) | 3 |
| 10 | HOTEL ON/OFF | ON/OFF | H MODE | OPTION | | OFF |
| 11 | HOTEL POSITION | 0 ~ 99 | H POSITION | OPTION | | 0 |
| 12 | HOTEL VOLUME | 0 ~ 60 | H VOLUME | OPTION | | 0 |

After short JA373 & JA374, and turn on the main power switch, read data from EEPROM Address 00H ~ 03H, and compare to the list below, if different, initialize the EEPROM.

| Address | Data | Address | Data |
|---|---|---|---|
| 00H | 23H | 02H | 18H |
| 01H | 23H | 03H | A3H |

## 1. SERVICE MODE 1

| No. | EEPROM SETTING | DATA LENGTH | OSD | IC | DATA SETTING | INITIAL DATA |
|---|---|---|---|---|---|---|
| 0 | MICOM INFO. DISPLAY | | SERVICE MODE | | | |
| 1 | CUT OFF | REFER # | CUTOFF BKGD | | | |
| 2 | CUT OFF (DVD) | REFER # | CUTOFFBKGD (DVD) | | | |
| 3 | V-SIZE | 0 ~ 63 | V-SIZE 50 | 1 CHIP | V-SIZE | 30 |
| 4 | V-LINEARITY (50Hz) #2 | 0 ~ 15 | V S-LINE 50 | 1 CHIP | V-LINEARITY | 10 |
| 5 | VS-CORRECTION (50Hz) #2 | 0 ~ 15 | V S-CORR 50 | 1 CHIP | V S-CORRECTION | 8 |
| 6 | V-POSITION #2 | 0 ~ 7 | V-CENT 50 | 1 CHIP | V-PHASE | 5 |
| 7 | H-POSITION #2 | 0 ~ 31 | H-CENT 50 | 1 CHIP | H-PHASE | 11 |
| 8 | H-SIZE (50Hz) #2 | 0 ~ 63 | H-SIZE 50 | 1 CHIP | H-SIZE | 32 |
| 9 | E/W-PARABOLA (50Hz) #2 | 0 ~ 63 | E/W PAR 50 | 1 CHIP | E/W PARABORA | 39 |
| 10 | E/W CORNER (50Hz) #2 | 0 ~ 15 | E/W COR 50 | 1 CHIP | E/W CORNER | 6 |
| 11 | TRAPEZIUM (50Hz) #2 | 0 ~ 31 | TRAPE 50 | 1 CHIP | TRAPEZIUM | 17 |
| 12 | SECAM R-Y #3 | 0 ~ 15 | SCM R-Y | 1 CHIP | SR-Y | 8 |
| 13 | SECAM B-Y #3 | 0 ~ 15 | SCM B-Y | 1 CHIP | SB-Y | 8 |
| 14 | BRIGHT | 0 ~ 127 | SUB BRI | 1 CHIP | BRIGHTNESS | 80 |
| 15 | BRIGHT (DVD) | 0 ~ 127 | SUB BRI DVD | 1 CHIP | BRIGHTNESS | 80 |
| 16 | SUB CONT | 0 ~ 15 | SUB CONT | 1 CHIP | SUB CONT | 3 |
| 17 | SUB CONT (DVD) | 0 ~ 15 | SUB CONT DVD | 1 CHIP | SUB XONT | 3 |
| 18 | TINT | 0 ~ 127 | SUB TINT | 1 CHIP | TINT | 64 |
| 19 | TINT (DVD) | 0 ~ 127 | SUB TINT DVD | 1 CHIP | TINT | 16 |
| 20 | V-SIZE | 0 ~ 63 | V-SIZE 60 | 1 CHIP | V-SIZE | 39 |
| 21 | V-LINEARITY | 0 ~ 15 | V-LINE 60 | 1 CHIP | V-LINEARITY | 10 |
| 22 | VS-CORRECTION (60Hz) | 0 ~ 15 | V S-CORR 60 | 1 CHIP | V S-CORRECTION | 9 |
| 23 | V-POSITION (60Hz) | 0 ~ 7 | V-CENT 60 | 1 CHIP | V-PHASE | 2 |
| 24 | H-POSITION (60Hz) | 0 ~ 31 | H-CENT 60 | 1 CHIP | H-PHASE | 14 |
| 25 | H-SIZE (60Hz) | 0 ~ 63 | H-SIZE 60 | 1 CHIP | H-SIZE | 34 |
| 26 | E/W PARABOLA (60Hz) | 0 ~ 63 | E/W PAR 60 | 1 CHIP | E/W PARABORA | 19 |
| 27 | E/W CORNER (60Hz) | 0 ~ 15 | E/W COT 60 | 1 CHIP | E/W CORNER | 4 |
| 28 | TRAPEZIUM (60Hz) | 0 ~ 31 | TRAPE 60 | 1 CHIP | TRAPEZIUM | 6 |
| 29 | COLOUR | 0 ~ 127 | SUB COL | 1 CHIP | COLOUR | 60 |
| 30 | COLOUR (DVD) | 0 ~ 127 | CUB COL DVD | 1 CHIP | COLOUR | 60 |
| 31 | V-ENT | 0 ~ 7 | V-ENT | 1 CHIP | V-ENT | 6 |
| 32 | H-ENT | 0 ~ 7 | H-ENT | 1 CHIP | H-ENT | 4 |
| 33 | RF AGC | 0 ~ 63 | RF AGC | 1 CHIP | RF AGC | 46 |
| 34 | SECAM BELL | 0 ~ 1 | SCM BELL | 1 CHIP | S BELL | 0 |
| 35 | SPRIT/INTER | 0 ~ 1 | S/I | 1 CHIP | SPRIT/INTER | 0 |
| 36 | RF SUB SOUND | 0 ~ 127 | RF S-SOUND | 1 CHIP | RF SUB SOUND | 96 |
| 37 | SUB VOLUME | 0 ~ 63 | SUB VOL | SOR/SPA | VOLUME | 45 |
| 38 | H. PHONE SUB VOL. ADJ. | 0 ~ 63 | HP SUB VOL | SOR/SPA | VOLUME | 63 |
| 39 | COLOUR TEMP. | 0 ~ 1 | WT | OPTION | Russia:0, Other:1 | 1 |
| 40 | PIF VCO | #4 | PIFVCO | | | - |
| 41 | LNA | ON/OFF | LNA | OPTION | | OFF |

#1 While selecting SERVICE MODE 1, MICOM Version Information, SOFTWARE Version Information, check some iformation will be displayed.

#2. 60 Hz Adjustment Value is programmed from ± 50 Hz Adjustment value (± will be informed later)

#3 While adjusting SECAM R-Y, SECAM B-Y and **S BLACK** of 1 chip is set to 1.

#4 While choosing PIFVCO MODE and **RF AGC** set to "0 0" and **PIFVCO** is set to "1".



## 2. SERVICE MODE 2

| NO. | EEPROM ITEM | DATA LENGTH | OSD | IC | DATA SETTING | INITIAL DATA |
|---|---|---|---|---|---|---|
| 1 | WPS | 0 ~ 1 | WPS | 1 CHIP | WPS | 1 |
| 2 | SUB CONTRAST | 0 ~ 127 | S CONT | 1 CHIP | CONTRAST | 127 |
| 3 | NTSC PHASE (NT) | 0 ~ 3 | N-PNT | 1 CHIP | NTSC PHASE | 0 |
| 4 | NTSC PHASE (PAL/SEC.) | 0 ~ 3 | N-P PS | 1 CHIP | NTSC PHASE | 0 |
| 5 | NTSC PHASE (DVD) | 0 ~ 3 | N-PD | 1 CHIP | NTSC PHASE | 3 |
| 6 | SUB SHARPNESS (TV) | 0 ~ 63 | S SHARP T | 1 CHIP | SHARPNESS | 32 |
| 7 | SUB SHARPNESS (AV) | 0 ~ 63 | S SHARP A | 1 CHIP | SHARPNESS | 20 |
| 8 | SUB SHARPNESS (DVD) | 0 ~ 63 | S SHARP D | 1 CHIP | SHARPNESS | 10 |
| 9 | RGB MUTE | 0 ~ 1 | RGB MUTE | 1 CHIP | RGB MUTE | OFF |
| 10 | RGB CONTRAST | 0 ~ 63 | RGB CONT | 1 CHIP | RGB CONTRAST | 32 |
| 11 | Y-DL (NTSC-M) | 0 ~ 3 | YNM | 1 CHIP | Y-DL | 1 |
| 12 | Y-DL (PAL-B/G) | 0 ~ 3 | YPB | 1 CHIP | Y-DL | 1 |
| 13 | Y-DL (PAL-I) | 0 ~ 3 | YPI | 1 CHIP | Y-DL | 3 |
| 14 | Y-DL (PAL-D/K) | 0 ~ 3 | YPD | 1 CHIP | Y-DL | 3 |
| 15 | Y-DL (SECAM-B/G) | 0 ~ 3 | YSB | 1 CHIP | Y-DL | 0 |
| 16 | Y-DL (SECAM-D/K) | 0 ~ 3 | YSD | 1 CHIP | Y-DL | 3 |
| 17 | Y-DL (B/W) | 0 ~ 3 | YBW | 1 CHIP | Y-DL | 0 |
| 18 | Y-DL (NTSC-AV) | 0 ~ 3 | YNA | 1 CHIP | Y-DL | 0 |
| 19 | Y-DL (PAL-AV) | 0 ~ 3 | YPA | 1 CHIP | Y-DL | 0 |
| 20 | Y-DL (SECAM-AV) | 0 ~ 3 | YSA | 1 CHIP | Y-DL | 0 |
| 21 | Y-DL (B/W-AV) | 0 ~ 3 | YBA | 1 CHIP | Y-DL | 0 |
| 22 | SUB COLOUR | 0 ~ 31 | SUB COL | 1 CHIP | SUB-COLOUR | 16 |
| 23 | VSM GAIN AVM1 | 0 ~ 7 | V-GAIN 1 | 1 CHIP | VSM GAIN | 3 |
| 24 | VSM GAIN AVM2 | 0 ~ 7 | V-GAIN 2 | 1 CHIP | VSM GAIN | 5 |
| 25 | VSM GAIN AVM3 | 0 ~ 7 | V-GAIN 3 | 1 CHIP | VSM GAIN | 7 |
| 26 | BASE BAND TINT | 0 ~ 31 | B-B TINT | 1 CHIP | BASE BAND TINT | |
| 27 | SECAM GP-PHASE | 0 ~ 3 | S G-PHASE | 1 CHIP | S SP-PHASE | 1 |
| 28 | SECAM ID-SENS | 0 ~ 1 | S ID-SENS | 1 CHIP | S ID-SENS | 0 |
| 29 | SECAM ID-MODE | 0 ~ 1 | S ID-MODE | 1 CHIP | S ID-MODE | 0 |
| 30 | PIF FREQ | 0 ~ 7 | P FREQ | 1 CHIP | PIF FREQ | 3 |
| 31 | P/N-ID | 0 ~ 1 | PN ID | 1 CHIP | P/N-ID | 0 |
| 32 | YS/YM MODE | 0 ~ 1 | YSM MODE | 1 CHIP | YSM MODE | 1 |
| 33 | RGB ABCL | 0 ~ 1 | RGB ABCL | 1 CHIP | RGB ABCL | 1 |
| 34 | DC RESTORATION | 0 ~ 3 | DC REST | 1 CHIP | DC RESTORATION | 3 |
| 35 | BLACK STRETCH | 0 ~ 3 | B ST | 1 CHIP | BLACK STRETCH | 1 |
| 36 | ABL START POINT | 0 ~ 3 | ABL ST | 1 CHIP | ABL START POINT | 3 |
| 37 | ABL GAIN | 0 ~ 3 | ABL GA | 1 CHIP | ABL GAIN | 2 |
| 38 | AKB MODE | 0 ~ 63 | AKB MODE | 1 CHIP | AKB MODE | 0 |
| 39 | COLOUR | 0 ~ 1 | COL G | 1 CHIP | COLOUR | 1 |
| 40 | V AGC | 0 ~ 1 | V AGC | 1 CHIP | V AGC | 0 |
| 41 | V RAMP REF | 0 ~ 1 | V RAMP | 1 CHIP | V RAMP | 1 |
| 42 | VSM PHASE | 0 ~ 1 | VSM PHASE | 1 CHIP | VSM PHASE | 1 |
| 43 | BASS LEVEL ON | 0 ~ 3 | BA LV | SUR/SPA | BASS LEVEL | 3 |
| 44 | BASS OFF AVM1 SP1 | 0 ~ 4 #1 | BA OFF 1 SP1 | SUR/SPA | BASS SW, LEVEL | 4 |
| 45 | BASS OFF AVM2 SP1 | 0 ~ 4 #1 | BA OFF 2 SP1 | SUR/SPA | BASS SW, LEVEL | 4 |
| 46 | BASS OFF AVM3 SP1 | 0 ~ 4 #1 | BA OFF 3 SP1 | SUR/SPA | BASS SW, LEVEL | 4 |
| 47 | BASS OFF AVM1 SP2 | 0 ~ 4 #1 | BA OFF 1 SP2 | SUR/SPA | BASS SW, LEVEL | 4 |
| 48 | BASS OFF AVM2 SP2 | 0 ~ 4 #1 | BA OFF 2 SP2 | SUR/SPA | BASS SW, LEVEL | 4 |
| 49 | BASS OFF AVM3 SP2 | 0 ~ 4 #1 | BA OFF 3 SP2 | SUR/SPA | BASS SW, LEVEL | 4 |
| 50 | BASS OFF AVM1 SP3 | 0 ~ 4 #1 | BA OFF 1 SP3 | SUR/SPA | BASS SW, LEVEL | 4 |
| 51 | BASS OFF AVM2 SP3 | 0 ~ 4 #1 | BA OFF 2 SP3 | SUR/SPA | BASS SW, LEVEL | 4 |
| 52 | BASS OFF AVM3 SP3 | 0 ~ 4 #1 | BA OFF 3 SP3 | SUR/SPA | BASS SW, LEVEL | 4 |
| 53 | BASS OFF AVM1 SP4 | 0 ~ 4 #1 | BA OFF 1 SP4 | SUR/SPA | BASS SW, LEVEL | 4 |
| 54 | BASS OFF AVM2 SP4 | 0 ~ 4 #1 | BA OFF 2 SP4 | SUR/SPA | BASS SW, LEVEL | 4 |

| NO. | EEPROM ITEM | DATA LENGTH | OSD | IC | DATA SETTING | INITIAL DATA |
|---|---|---|---|---|---|---|
| 55 | BASS OFF AVM3 SP4 | 0 ~ 4 #1 | BA OFF 3 SP4 | SUR/SPA | BASS SW, LEVEL | 4 |
| 56 | AGC SW | 0 ~ 1 | AGC SW | SUR/SPA | AGC SW | ON |
| 57 | AGC ADJ | 0 ~ 3 | AGC AD | SUR/SPA | AGC ADJ | 2 |
| 58 | FM LEVEL | #2 | FM L | NICAM | FM LEVEL | +1 |
| 59 | IGR LEVEL | #2 | IGR L | NICAM | IGR LEVEL | +2 |
| 60 | NICAM B/G LEVEL | #3 | BG L | NICAM | NICAM B/G LEVEL | -1 |
| 61 | NICAM 1 LEVEL | #3 | I L | NICAM | NICAM I LEVEL | +4 |
| 62 | NICAL D/K LEVEL | #3 | DK L | NICAM | NICAM D/K LEVEL | -1 |
| 63 | LOWER ERROR | 0 ~ 255 | L ERR | NICAM | LOWER ERROR | 35 |
| 64 | UPPER ERROR | 0 ~ 255 | U ERR | NICAM | UPPER ERROR | 70 |
| 65 | IGR GAIN (9873H) | #4 | IGR G | NICAM | IGR GAIN (9873H) | 0 |
| 66 | NICAM SPEED | 0 ~ 3 | N SPE | NICAM | N SPEED | 2 |
| 67 | INTER/EXTER | 0 ~ 1 | IN/EX | NICAM | INTER/EXTER | 0 |
| 68 | AUTO MUTE | 0 ~ 1 | AM | NICAM | AUTO MUTE | OFF |
| 69 | AGC SW ON/OFF | 0 ~ 1 | AGC SW | NICAM | AGC SW | OFF |
| 70 | AGC GAIN | 0 ~ 31 | AGC G | NICAM | AGC GAIN | 16 |
| 71 | SYAKIT VOLUME 1 | 0 ~ 21 | SVOL 1 | SYAKIT | SVOLUME 1 | 0 |
| 72 | SYAKIT VOLUME 2 | 0 ~ 3 | SVOL 2 | SYAKIT | SVOLUME 2 | 0 |
| 73 | SYAKIT LOU | 0 ~ 1 | SLOT | SYAKIT | SLOU | 1 |
| 74 | SYAKIT ATT | 0 ~ 7 | SATT | SYAKIT | SATT OUT | 0 |
| 75 | SYAKIT BASS | 0 ~ 13 | SBASS | SYAKIT | S-BASS | 6 |
| 76 | SYAKIT TREBLE | 0 ~ 13 | STRE | SYAKIT | S-TREBLE | 6 |
| 77 | MAX LEVEL SYAKIT 1 | 0 ~ 5 | S1MA | | | 3 |
| 78 | MAX LEVEL SYAKIT 2 | 0 ~ 5 | S2MA | | | 4 |
| 79 | MAX LEVEL SYAKIT 3 | 0 ~ 5 | S3MA | | | 6 |
| 80 | START LEVEL SYAKIT 1 | 0 ~ 63 | S1ST | | | 17 |
| 81 | START LEVEL SYAKIT 2 | 0 ~ 63 | S2ST | | | 21 |
| 82 | START LEVEL SYAKIT 3 | 0 ~ 63 | S3ST | | | 20 |
| 83 | WIDE LEVEL SYAKIT 1 | 0 ~ 7 | S1W1 | | | 6 |
| 84 | WIDE LEVEL SYAKIT 2 | 0 ~ 7 | S2W1 | | | 3 |
| 85 | WIDE LEVEL SYAKIT 3 | 0 ~ 7 | S3W1 | | | 3 |
| 86 | STOP LEVEL SYAKIT 1 | 0 ~ 5 | S1SP | | | 1 |
| 87 | STOP LEVEL SYAKIT 2 | 0 ~ 5 | S2SP | | | 1 |
| 88 | STOP LEVEL SYAKIT 3 | 0 ~ 5 | S3SP | | | 1 |
| 89 | BASS MAX SYAKIT 1 | 0 ~ 15 | SBASS1 | | | 12 |
| 90 | BASS MAX SYAKIT 2 | 0 ~ 15 | SBASS2 | | | 11 |
| 91 | BASS MAX SYAKIT 3 | 0 ~ 15 | SBASS3 | | | 10 |
| 92 | TREBLE MAX SYAKIT 1 | 0 ~ 15 | STRE1 | | | 12 |
| 93 | TREBLE MAX SYAKIT 2 | 0 ~ 15 | STRE2 | | | 11 |
| 94 | TREBLE MAX SYAKIT 3 | 0 ~ 15 | STRE3 | | | 10 |
| 95 | BASS AVM1 SP1 | #6 | BASS 1 SP1 | | | -5 |
| 96 | BASS AVM2 SP1 | #6 | BASS 2 SP1 | | | +2 |
| 97 | BASS AVM3 SP1 | #6 | BASS 3 SP1 | | | +5 |
| 98 | BASS AVM1 SP2 | #6 | BASS 1 SP2 | | | -5 |
| 99 | BASS AVM2 SP2 | #6 | BASS 2 SP2 | | | 0 |
| 100 | BASS AVM3 SP2 | #6 | BASS 3 SP2 | | | +5 |
| 101 | BASS AVM1 SP3 | #6 | BASS 1 SP3 | | | -5 |
| 102 | BASS AVM2 SP3 | #6 | BASS 2 SP3 | | | 0 |
| 103 | BASS AVM3 SP3 | #6 | BASS 3 SP3 | | | +10 |
| 104 | BASS AVM1 SP4 | #6 | BASS 1 SP4 | | | -5 |
| 105 | BASS AVM2 SP4 | #6 | BASS 2 SP4 | | | -2 |
| 106 | BASS AVM3 SP4 | #6 | BASS 3 SP4 | | | +10 |
| 107 | TREBLE AVM1 SP1 | #6 | TRE 1 SP1 | | | -5 |
| 108 | TREBLE AVM2 SP1 | #6 | TRE 2 SP1 | | | 0 |
| 109 | TREBLE AVM3 SP1 | #6 | TRE 3 SP1 | | | +5 |
| 110 | TREBLE AVM1 SP2 | #6 | TRE 1 SP2 | | | -5 |



| NO. | EEPROM ITEM | DATA LENGTH | OSD | IC | DATA SETTING | INITIAL DATA |
|---|---|---|---|---|---|---|
| 111 | TREBLE AVM2 SP2 | #6 | TRE 2 SP2 | | | +2 |
| 112 | TREBLE AVM3 SP2 | #6 | TRE 3 SP2 | | | +8 |
| 113 | TREBLE AVM1 SP3 | #6 | TRE 1 SP3 | | | -10 |
| 114 | TREBLE AVM2 SP3 | #6 | TRE 2 SP3 | | | +1 |
| 115 | TREBLE AVM3 SP3 | #6 | TRE 3 SP3 | | | +5 |
| 116 | TREBLE AVM1 SP4 | #6 | TRE 1 SP4 | | | -10 |
| 117 | TREBLE AVM2 SP4 | #6 | TRE 2 SP4 | | | +3 |
| 118 | TREBLE AVM3 SP4 | #6 | TRE 3 SP4 | | | +5 |
| 119 | BASS MODE AVM1 SP1 | ON/OFF #7 | BA MO 1 SP1 | | | OFF |
| 120 | BASS MODE AVM2 SP1 | ON/OFF #7 | BA MO 2 SP1 | | | OFF |
| 121 | BASS MODE AVM3 SP1 | ON/OFF #7 | BA MO 3 SP1 | | | ON |
| 122 | BASS MODE AVM1 SP2 | ON/OFF #7 | BA MO 1 SP2 | | | OFF |
| 123 | BASS MODE AVM2 SP2 | ON/OFF #7 | BA MO 2 SP2 | | | OFF |
| 124 | BASS MODE AVM3 SP2 | ON/OFF #7 | BA MO 3 SP2 | | | ON |
| 125 | BASS MODE AVM1 SP3 | ON/OFF #7 | BA MO 1 SP3 | | | OFF |
| 126 | BASS MODE AVM2 SP3 | ON/OFF #7 | BA MO 2 SP3 | | | OFF |
| 127 | BASS MODE AVM3 SP3 | ON/OFF #7 | BA MO 3 SP3 | | | ON |
| 128 | BASS MODE AVM1 SP4 | ON/OFF #7 | BA MO 1 SP4 | | | OFF |
| 129 | BASS MODE AVM2 SP4 | ON/OFF #7 | BA MO 2 SP4 | | | OFF |
| 130 | BASS MODE AVM3 SP4 | ON/OFF #7 | BA MO 3 SP4 | | | ON |
| 131 | CONTRAST AVM1 | #8 | CONT 1 | | | 55 |
| 132 | CONTRAST AVM2 | #8 | CONT 2 | | | 57 |
| 133 | CONTRAST AVM3 | #8 | CONT 3 | | | 60 |
| 134 | CONTRAST AVM1 FL | #8 | CONT 1 FL | | | 55 |
| 135 | CONTRAST AVM2 FL | #8 | CONT 2 FL | | | 57 |
| 136 | CONTRAST AVM3 FL | #8 | CONT 3 FL | | | 60 |
| 137 | COLOUR AVM1 | #9 | COL 1 | | | 0 |
| 138 | COLOUR AVM2 | #9 | COL 2 | | | 0 |
| 139 | COLOUR AVM3 | #9 | COL 3 | | | 10 |
| 140 | COLOUR AVM1 FL | #9 | COL 1 FL | | | 0 |
| 141 | COLOUR AVM2 FL | #9 | COL 2 FL | | | 0 |
| 142 | COLOUR AVM3 FL | #9 | COL 3 FL | | | 10 |
| 143 | SHARP AVM1 | #10 | SHARP 1 | | | -5 |
| 144 | SHARP AVM2 | #10 | SHARP 2 | | | 0 |
| 145 | SHARP AVM3 | #10 | SHARP 3 | | | 0 |
| 146 | SHARP AVM1 FL | #10 | SHARP 1 FL | | | -5 |
| 147 | SHARP AVM2 FL | #10 | SHARP 2 FL | | | 0 |
| 148 | SHARP AVM3 FL | #10 | SHARP 3 FL | | | 0 |
| 149 | γ- POINT AVM1 | #11 | G-POINT 1 | | | 3 |
| 150 | γ- POINT AVM2 | #11 | G-POINT 2 | | | 2 |
| 151 | γ- POINT AVM3 | #11 | G-POINT 3 | | | 1 |
| 152 | γ- POINT AVM1 FL | #11 | G-POINT 1 FL | | | 3 |
| 153 | γ- POINT AVM2 FL | #11 | G-POINT 2 FL | | | 2 |
| 154 | γ- POINT AVM3 FL | #11 | G-POINT 3 FL | | | 1 |
| 155 | SEARCH SPEED | #12 | S SPE | | | 450 |
| 156 | OSD | 0 ~ 127 | OSD-H | | | 2 |
| 157 | BUZZ | 0 ~ 1 | BUZZ | 1 CHIP | BUZZ | 0 |
| 158 | AV AFC | 0 ~ 1 | AV AFC | | | 1 |
| 159 | TEXT H | 0 ~ 63 | TEXT H | TEXT | | 34 |
| 160 | TEXT V | 0 ~ 63 | TEXT V | TEXT | | 35 |
| 161 | NVM | | NVM | EEPROM | | |

# INITIAL SETTING

(1) Execute MCL 1/2 key to set the following data in EEPROM.

| | SREC/SRAC/SYI/STTM | | | | | SREC-SCA (SKD) | | | |
|---|---|---|---|---|---|---|---|---|---|
| R/C CODE | MCL 1 (R/C CODE 117h) | | | | | MCL 2 (R/C CODE 169h) | | | |
| TV-CH. | CH-No. | Fv (MHz) | S-SYSTEM | | | CH-No. | Fv (MHz) | S-SYSTEM | |
| 0 | SKIP OFF FREE | | | | | | 590.25 | 5.5 | B/G |
| 1 | E-2 | 48.25 | 5.5 | B/G | | AU-0 | 46.25 | 5.5 | B/G |
| 2 | E-4/B-3 | 62.25 | 5.5 | B/G | | AU-2 | 64.25 | 5.5 | B/G |
| 3 | OIR-3 | 77.25 | 6.5 | D/K | | AU-3 | 86.25 | 5.5 | B/G |
| 4 | E-5 | 175.25 | 5.5 | B/G | | AU-4 | 95.25 | 5.5 | B/G |
| 5 | E-6/B-5 | 182.25 | 5.5 | B/G | | AU-5A | 138.25 | 5.5 | B/G |
| 6 | OIR-7 | 183.25 | 6.5 | D/K | | AU-6 | 175.25 | 5.5 | B/G |
| 7 | OIR-8 | 191.25 | 6.5 | D/K | | AU-7 | 182.25 | 5.5 | B/G |
| 8 | E-8/B-7 | 196.25 | 5.5 | B/G | | AU-8 | 189.25 | 5.5 | B/G |
| 9 | J-9 | 199.25 | 4.5 | M | | AU-9 | 196.25 | 5.5 | B/G |
| 10 | E-10/B-9 | 210.25 | 5.5 | B/G | | AU-10 | 209.25 | 5.5 | B/G |
| 11 | E-12/B-11 | 224.25 | 5.5 | B/G | | AU-11 | 216.25 | 5.5 | B/G |
| 12 | E-21 | 471.25 | 5.5 | B/G | | SKIP OFF FREE | | | |
| 13 | I-23 | 487.25 | 6.0 | I | | SKIP OFF FREE | | | |
| 14 | E-25 | 503.25 | 5.5 | B/G | | SKIP OFF FREE | | | |
| 15 | E-34 | 575.25 | 5.5 | B/G | | SKIP OFF FREE | | | |
| 16 | E-35 | 583.25 | 5.5 | B/G | | SKIP OFF FREE | | | |
| 17 | E-37 | 599.25 | 5.5 | B/G | | SKIP OFF FREE | | | |
| 18 | J-38 | 621.25 | 4.5 | M | | SKIP OFF FREE | | | |
| 19 | OIR-42 | 639.25 | 6.5 | D/K | | SKIP OFF FREE | | | |
| 20 | B-50 | 703.25 | 5.5 | B/G | | SKIP OFF FREE | | | |
| 21 | I-54 | 735.25 | 6.0 | I | | SKIP OFF FREE | | | |
| 22 | E-58 | 767.25 | 5.5 | B/G | | SKIP OFF FREE | | | |
| 23 | E-64 | 815.25 | 5.5 | B/G | | SKIP OFF FREE | | | |
| 24 | I-69 | 855.25 | 6.0 | I | | SKIP OFF FREE | | | |
| 25 | E-69 | 855.25 | 5.5 | B/G | | SKIP OFF FREE | | | |
| 26 | US-2 | 55.25 | 4.5 | M | | SKIP OFF FREE | | | |
| 27 | A-6 | 83.25 | 4.5 | M | | SKIP OFF FREE | | | |
| 28 | JA-6 | 183.25 | 4.5 | M | | WE-28 | 527.25 | 5.5 | B/G |
| 29 | JA-8 | 193.25 | 4.5 | M | | SKIP OFF FREE | | | |
| 30 | JA-12 | 217.25 | 4.5 | M | | SKIP OFF FREE | | | |
| 31 | US-14 | 471.25 | 4.5 | M | | SKIP OFF FREE | | | |
| 32 | JA-14 | 477.25 | 4.5 | M | | SKIP OFF FREE | | | |
| 33 | JA-50 | 693.25 | 4.5 | M | | SKIP OFF FREE | | | |
| 34 | US-83 | 885.25 | 4.5 | M | | SKIP OFF FREE | | | |
| 35 | S-2 | 112.25 | 5.5 | B/G | | SKIP OFF FREE | | | |
| 36 | S-10 | 168.25 | 5.5 | B/G | | SKIP OFF FREE | | | |
| 37 | SKIP OFF FREE | | | | | AU-37 | 590.25 | 5.5 | B/G |
| 38 | S-20 | 294.25 | 5.5 | B/G | | SKIP OFF FREE | | | |
| 39 | S-41 | 463.25 | 5.5 | B/G | | SKIP OFF FREE | | | |
| 40 | SKIP OFF FREE | | | | | SKIP OFF FREE | | | |
| 41 | B-43 | 647.25 | 5.5 | B/G | | E-2 | 48.25 | 5.5 | B/G |
| 42 | B-45 | 663.25 | 5.5 | B/G | | E-4 | 62.25 | 5.5 | B/G |
| 43 | B-47 | 679.25 | 5.5 | B/G | | OI-3 | 77.25 | | |
| 44 | E-5 | 174.95 | 5.5 | B/G | | E-5 | 175.25 | 5.5 | B/G |
| 45 | E-5 | 175.55 | 5.5 | B/G | | OIR-7 | 183.25 | | |
| 46 | SKIP OFF FREE | | | | | OIR-8 | 191.25 | | |
| 47 | SKIP OFF FREE | | | | | E-10 | 210.25 | 5.5 | B/G |
| 48 | SKIP OFF FREE | | | | | E-12 | 224.25 | 5.5 | B/G |
| 49 | SKIP OFF FREE | | | | | I-23 | 487.25 | 6.0 | I |
| 50 | SKIP OFF FREE | | | | | E-25 | 503.25 | 5.5 | B/G |
| 51 | SKIP OFF FREE | | | | | E-34 | 575.25 | 5.5 | B/G |



| | SREC/SRAC/SYI/STTM | | | | SREC-SCA (SKD) | | | |
|---|---|---|---|---|---|---|---|---|
| R/C CODE | MCL 1 (R/C CODE 117h) | | | | MCL 2 (R/C CODE 169h) | | | |
| TV-CH. | CH-No. | Fv (MHz) | S-SYSTEM | | CH-No. | Fv (MHz) | S-SYSTEM | |
| 52 | SKIP OFF FREE | | | | E-37 | 599.25 | 5.5 | B/G |
| 53 | SKIP OFF FREE | | | | JPN-38 | 621.25 | 4.5 | M |
| 54 | SKIP OFF FREE | | | | OI-42 | 639.25 | | |
| 55 | SKIP OFF FREE | | | | I-54 | 735.25 | 6.0 | I |
| 56 | SKIP OFF FREE | | | | E-58 | 767.25 | 5.5 | B/G |
| 57 | SKIP OFF FREE | | | | E-64 | 815.25 | 5.5 | B/G |
| 58 | SKIP OFF FREE | | | | I-69 | 855.25 | 6.0 | I |
| 59 | SKIP OFF FREE | | | | JA-1 | 91.25 | 4.5 | M |
| 60 | SKIP OFF FREE | | | | JA-6 | 183.25 | 4.5 | M |
| 61 | SKIP OFF FREE | | | | JA-8 | 193.25 | 4.5 | M |
| 62 | SKIP OFF FREE | | | | JA-12 | 217.25 | 4.5 | M |
| 63 | SKIP OFF FREE | | | | US-14 | 471.25 | 4.5 | M |
| 64 | SKIP OFF FREE | | | | JA-50 | 693.25 | 4.5 | M |
| 65 | SKIP OFF FREE | | | | S-2 | 112.25 | 5.5 | B/G |
| 66 | SKIP OFF FREE | | | | S-10 | 168.25 | 5.5 | B/G |
| 67 | SKIP OFF FREE | | | | S-20 | 294.25 | 5.5 | B/G |
| 68 | SKIP OFF FREE | | | | S-41 | 463.25 | 5.5 | B/G |
| 69 | SKIP OFF FREE | | | | E-5 | 174.95 | 5.5 | B/G |
| 70 | SKIP OFF FREE | | | | E-5 | 175.55 | 5.5 | B/G |
| 71 | SKIP OFF FREE | | | | SKIP OFF FREE | | | |
| | ↓ | | | | ↓ | | | |
| 99 | SKIP OFF FREE | | | | SKIP OFF FREE | | | |

# SHIPPING SETTING AND CHECKING

(1) The following default data has been factory-set for the $E^2$PROM.

| ITEMS | DATA SETTING | | | |
|---|---|---|---|---|
| | FACTORYSET 1 | FACTORYSET 2 | FACTORYSET 3 | FACTORYSET 4 |
| R/C | 28(H) | A8(H) | E8(H) | E9(H) |
| S-SYSTEM | ALL CH D/K | ALL CHI | ALL CH B/G | ALL CH B/G |
| LANGUAGE SELECT | CHINESE | CHINESE | ENGLISH | ARABIC |

| ITEMS | DATA SETTING | | | |
|---|---|---|---|---|
| | FACTORYSET 5 | FACTORYSET 6 | FACTORYSET 7 | FACTORYSET 8 |
| R/C | EA(H) | EB(H) | EC(H) | ED(H) |
| S-SYSTEM | ALL CH D/K | ALL CH B/G | ALL CH D/K | #1(MCL) |
| LANGUAGE SELECT | RUSSIAN | MALAY | FRENCH | ENGLISH |

#1 FACTORY-SET 8 OPERATE MCL2  #2 FACTORY-SET 8 only

| ITEM | DATA SETTING |
|---|---|
| LAST POWER | ON |
| LAST TV/AV MODE | TV |
| LAST CH | CH1/CH2(#2) |
| FLASH BACK | CH1 |
| FAVORITE CH1 | CH10 |
| FAVORITE CH2 | CH20 |
| FAVORITE CH3 | CH30 |
| FAVORITE CH4 | CH40 |
| 1 DIGIT/2 DIGIT | 2 DIGIT |
| VOLUME | 0 |
| H/P-VOLUME | 0 |
| ROTATION | 0 |
| SAVE | OFF |
| AV MODE | 2 |
| BALANCE | 0 |
| BLUE BACK | OFF |
| AUTO SELECT | ON |

| ITEM | DATA SETTING |
|---|---|
| VM | ON |
| TEXT | 1 |
| LNA | OFF |
| ON TIMER | IN ACTIVE |
| ON TIMER CH | IN ACTIVE |
| ON TIMER VOLUME | IN ACTIVE |
| REMINDER | IN ACTIVE |
| AFT | ALL CH ON |
| COLOUR SYSTEM | ALL CH AUTO |
| SKIP | ALL CH OFF |
| NICAM ON/OFF | ALL CH ON |
| SICAM STEREO MODE | ALL CH STEREO |
| NICAM BILINGUAL MODE | ALL CH M1 |
| NICAM MONO MODE | ALL CH MONO |
| IGR ON/OFF | ALL CH ON |
| IGR STEREO MODE | ALL CH STEREO |
| IGR BILINGUAL MODE | ALL CH MAIN |

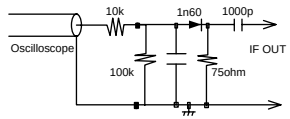
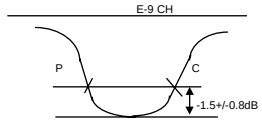
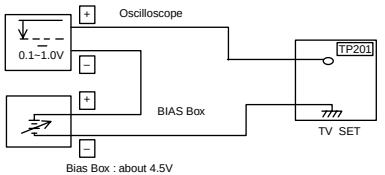
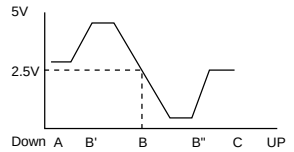
| MODE | 1 SOFT | 2 STANDARD | 3 DYNAMIC |
|---|---|---|---|
| CONTRAST | # | # | # |
| COLOR | # | # | # |
| BRIGHT | 0 | 0 | 0 |
| TINT | 0 | 0 | 0 |
| SHARPNESS | # | # | # |
| PICTURE NR | OFF | OFF | OFF |
| WHITE TEMP | 0 | 0 | 0 |
| SHAKIT | OFF | OFF | OFF |
| BASS + | # | # | # |
| SOR/SPA | OFF | OFF | OFF |
| LEVEL | 0 | 0 | 0 |
| BASS | # | 0 | # |
| TREBLE | # | 0 | # |

# SERVICE MODE DATA

| Model | Magnetic Field (V.H) nT | | Background | Lang. | S-SYS |
|---|---|---|---|---|---|
| B | 20,000 | 40,000 | 17,000°K | CHINESE | I |
| C (Singapore) | -10,000 | 40,000 | 17,000°K | ENGLISH | B/G |
| F | -10,000 | 40,000 | 17,000°K | ENGLISH | B/G |
| G | 30,000 | 20,000 | 18,000°K | ARABIC | B/G |
| Australia | -50,000 | 20,000 | 17,000°K | ENGLISH | B/G |



# SERVICE ADJUSTMENT
# PIF ADJUSTMENT CHECKING

| No. | Adjustment point | Adjustment Condition / Procedure | Waveform or others |
|---|---|---|---|
| 1 | **Tuner IFT (PRESET) TU200** | 1. Get the tuner ready to receive the CH. E-10 signal, but with no signal input. Adjust the PLL data.<br>2. Connect the sweep generator's output cable to the tuner antenna. (RF SWEEP)<br>3. Adjust the sweep generator's to 80dBµV.<br>4. Connect the response lead (use LOW IMPEDANCE probe with wave detector ; see **Fig.1**) to the tuner's IF output terminal. (This terminal must have the probe alone connected).<br>5. Set the RF AGC to 0 - 6 V with no saturation with the waveform.<br>6. Adjust the tuner IF coil to obtain the waveform as shown in **Fig. 2**.<br>Note: Be sure to keep the tuner cover in position during this adjustment. |  **Fig. 1**<br>  **Fig. 2** |
| 2 | **RF-AGC TAKE OVER POINT ADJUSTMENT ($I^2C$ BUS CONTROL)** | 1. Receive the PAL Colour bar signal. Signal Strength: 54 ± 1dBµV (75Ω open)<br>2. Connect the oscilloscope to TP201 (Tuner's AGC Terminal) as shown in **Fig. 3**.<br>  **Fig. 3**<br>3. Call "RF-AGC" mode in service mode. Adjust the "RF-AGC" bus data to obtain the Tuner output pin drop 0.1 ~ 1.0V below maximum voltage.<br>4. Change the antenna input signal to 63 ~ 67 dBµV, and make sure there is no noise.<br>5. Turn up the input signal to 90 ~ 95dBµV to be sure that there is no cross modulation beat. | Note:<br>For the 50Ω signal strength gauge, when not using 50/75 impedance adapter, signal strength is 52 ± 1dBµV (75Ω open), instead of 54 ± 1dBµV (75Ω open).<br>precaution:<br>The loss of using impedance adapter. |
| 3 | **PIF VCO COIL ADJUSTMENT** | 1. Do not receive any signal.<br>2. Connect the digital voltmeter to TP803 (pin (54) of IC800) in the main unit.<br>3. Call the "PIF VCO" Mode at the service mode.<br>4. Verify that it is turned counterclockwise to 0V and adjust T800 to make DC voltage of TP803 become 2.5 ± 0.1V in the range. | DC voltage at TP803<br>  <br>Adjust T800 to B point, between B' and B".<br>* Turn the coil counterclockwise for the up direction and clockwise for the down direction. |

## SOUND ADJUSTMENT

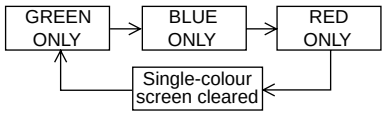
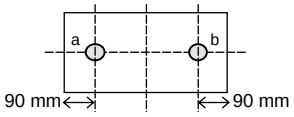
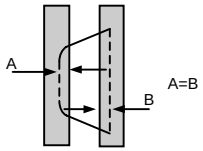
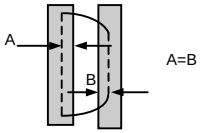
| No. | Adjustment point | Adjustment Condition / Procedure | Waveform or others |
|---|---|---|---|
| 1 | **RF SUB SOUND (BUS ADJUSTMENT) (CX68KF5)** | 1. Receive the PAL B/G signal.<br>Audio signal: 400 Hz, 100% modulated (50 kHz dev.)<br>2. Connect the oscilloscope to the Audio Out (L or R) terminal. (Terminate with 10K ohm impedance).<br>3. Call the "RF-S-SOUND" in service mode.<br>4. Increase or decrease "RF S-SOUND" by using Volume UP/DOWN key, so that the 400Hz sine wave be 1.76 ± 0.1Vp-p. | |
| 2 | **SUB VOL (BUS ADJUSTMENT)** | 1. Receive the PAL Colour Bar signal.<br>Signal content: 400Hz 100% Mod.<br>2. Connect the probe of the meter (*) to (SI) connector.<br>3. Select the SUB-VOL in the service mode.<br>4. Adjust the SUB-VOL data to make the meter indicate 5.2 Vrms (at L-CH).<br>Adjustment value: 5.2 ± 0.3 Vrms | Note:<br>* SURROUND OFF<br>* AV MODE (STANDARD)<br>* S-NORMAL state<br>* S-VOL Max<br>* Bass + OFF |
| 3 | **NOISE MUTE CHECKING** | 1. Receive the PAL Colour Bar signal.<br>2. Turn up the volume control to maximum, make sure the sound is heard from the speakers. Then put the unit in no signal state.<br>3. Check the sound mute is effective.<br>4. Finally turn sound level of CTV to minimum. | |



## SIF(NICAM/IGR) ADJUSTMENT

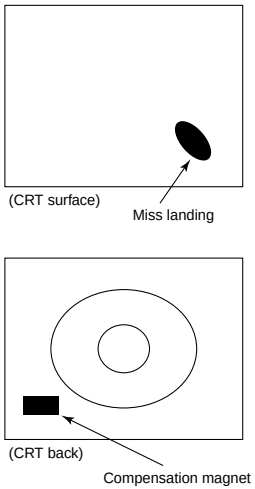
| No. | Adjustment point | Adjustment Condition / Procedure | Waveform or others |
|---|---|---|---|
| 1 | **VCO COIL T2300 (SX68KF7)** | 1. Receive the PAL Colour Bar signal.<br>(Set the receiving frequency at AFT OFF VHF high frequency.)<br>2. Connect the digital voltmeter to TP2300 or pin (1) of SC200 (in the main unit).<br>3. Verify that it is turned counterclockwise to 0V and clockwise to 5V, and adjust T2300 to make the DC voltage of TP2300 become 2.5 ± 0.1 V in the range.<br><br>* Single-unit adjustment<br>Vcc 5 ± 0.1V<br><br>IF input frequency 38.9MHz ± 10kHz. Control it under these conditions.<br><br>Adjust T2300 to make the DC voltage of TP2300 (in the NICAM unit) become 2.5 ± 0.1V.<br><br>After single-unit adjustment, check the practical setup.<br><br>Align the receiving frequency to the select channel frequency. (AFT OFF)<br><br>The checked voltage must be 2.5 ± 1.0V.<br><br>(Take care that ± 1.0 is considered for the Vcc difference between the single unit and unit, Fo difference and so on, but is not the adjustment precision.) | |

## PURITY ADJUSTMENT

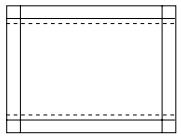
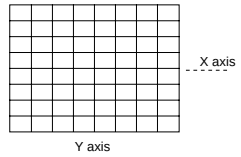
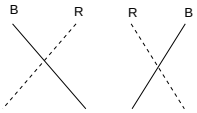
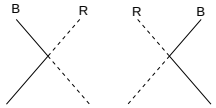
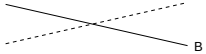
| No. | Adjustment point | Adjustment Condition / Procedure | Waveform or others |
|---|---|---|---|
| 1 | **PURITY ADJUSTMENT** | 1. Receive the GREEN -ONLY signal and set the beam current to 1.6mA with the contrast control.<br>2. Degauss the CRT enough with the degaussing coil.<br>Note: Follow the job instruction sheet to adjust the magnetic field.<br>*BH = 0<br>*Bv = refer to the job intructions sheet.<br>Adjustable magnetic field is shown in page 7.<br>3. Maintain the purity magnet at the zero magnetic field and keep the static convergence roughly adjusted.<br>With P-Mag, adjust it to the center: rank A.<br>4. Observe the points a, b, as shown in **Fig.4-1** through the microscope. Adjust the landings to A rank requirement.<br>5. If the a/b balance is poor, compensate it to the center "Rank AB".<br>6. Orient the raster rotation to 0 eastward.<br>7. Tighten up the deflection coil screws.<br>Tightening torque : 108 ± 20N (11 ± 2Kgf)<br>8. Make sure the CRT corners landing meet the A rank requirements. If not, stick the magnet sheet to correct it.<br>Note: Apply the adjustment after aging with the beam current 1,600 ± 50μA or more for 30 minutes or more.<br>Note: Select the service mode, and press the monocolour key of R/C for process, and the monocolour screen (green) will be selected.<br>* For the following colours press R/C RGB key to change.<br>  <br>* Adjustment for uniformity is change to another content. Please refer to the following page. |  <br>**Fig. 4-1**<br>  <br>**Fig. 4-2 Rank A (On the right of CRT)**<br>  <br>**Fig. 4-3 Rank A (On the left of CRT)**<br>* Continuosly press the monocolour key a second or more, and the monocolour mode will be selected without the service mode.<br>Even with TEXT key or "R.G.Cy" key, it can be directly switched to each monocolour screen. |

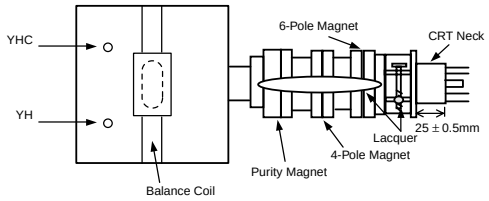


## UNIFORMITY ADJUSTMENT

| No. | Adjustment point | Adjustment Condition / Procedure | Waveform or others |
|---|---|---|---|
| 1 | **Uniformity adjustment (To perform after the purity and convergence adjustment)** | Before adjustment begin, Horizontal magnetic field=0G, Vertical magnetic field = Each destination adjustment magnetic field.<br>Make sure degauss it.<br><br>**North Direction Red Uniformity**<br>1. Horizontal mf = Set to monocolour screen Red and adjust to +0.25G.<br>2. Pay attention to the edge of CRT, if the landing is poor, adjust by attaching the compensation magnet at the back of CRT. Refer to **Fig.5**.<br><br>**South Direction Red Uniformity**<br>1. Horizontal mf = Set to monocolour screen Red and adjust to -0.25G.<br>2. Pay attention to the edge of CRT, if the landing is poor, adjust by attaching the compensation magnet at the back of CRT.<br><br>The same method is applied for adjustment of monocolour screen Blue for blue uniformity, and changing both the magnetic field for north and south direction.<br><br>* During the pasting of compensation magent, use the crosshatch pattern signal.<br>Make sure there is no blur or bend lines occur.<br>If the blur or bend lines are serious, adjust the location of compensation magnet to make it better. |  <br>**Fig.5** |

# CONVERGENCE ADJUSTMENT

| No. | Adjustment point | Adjustment Condition / Procedure | Waveform or others |
|---|---|---|---|
| 1 | **CONVERGENCE ADJ (To be done after the purity adjustment.)** | (1)Receive the Crosshatch pattern signal.<br>(2)Using the remote controller, call NORMAL mode.<br><br>**Static Convergence Adjustment**<br>1. Overlap blue and red with the open-/closing angle and rotation of the 4 pole magnet.<br>2. Overlap green on blue and red with the open-/closing angle and rotation of the 6 pole magnet.<br><br>**Dynamic Convergence Adjustment**<br>1. Fix the wedges in a position so that the deflection yoke neck is at the center of top bottom and left right. (Straight line and without any blur horizontal / vertical line)<br>2. Adjust the Red, Blue, upper and lower of the center y axis on the screen by using the Volume (YH,YHC) at the deflection yoke. Refer to **Fig. 6-2** and **Fig. 6-3**<br>3. If the Horizontal Red. Blue (XV) on the screen center X axis is shifted, correct the Red. Blue (XV) by adjusting the balance coil on the deflection yoke. **Refer to Fig.6-4**.<br>4. After confirm that there is no problems on the entire screen, bond wedge on CRT and glass tape on it. Fastening the screws of DY and magnet unit (purity, 4-pole and 6 pole), then coat the lacquer paint on DY fastening screw and magnet unit fastening screw.<br><br>**Note:** In case of poor convergence adjustment on the top and bottom of the screen, adjust DY by swing rightward and leftward. Refer to **Fig.6-1**<br>  <br>**Fig. 6-1**<br>Adjust by swing DY<br><br>**Note:** For CRT drawing, please refer to following page. |  <br>  <br>**Fig. 6-2**<br>Adjust by YHC<br><br>  <br>**Fig. 6-3**<br>Adjust by YH<br><br>  <br>**Fig. 6-4**<br>Adjust by Balance Coil |






# FOCUS ADJUSTMENT

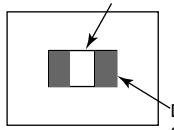
| No. | Adjustment point | Adjustment Condition / Procedure | Waveform or others |
|---|---|---|---|
| 1 | **Dynamic focus adjustment L1680 (in the power unit)** | 1. Receive the Monoscope pattern signal.<br>2. With the remote controller, make it normal.<br>3. Connect the oscilloscope to the pin (8) of T1680.<br>4. Turning L1680, adjust the amplitude of the horizontal frequency waveform to 1,000Vp-p.<br> | Approx. 1,000Vp-p |
| | **Focus adjustment FBT Focus VR** | 1. Receive the Monoscope pattern signal.<br>2. With the remote controller, make it normal.<br>3. Adjust the focus VR-1(F1) to make the horizontal line around "575" on the bottom left of the screen as fine as possible.<br>4. Adjust the focus VR-2(F2) to make the vertical line around "575" on the bottom left of the screen as fine as possible.<br>5. Repeat item 3 once again to adjust the focus. | |

## CUT OFF, BKGD, SUB-CONT ADJUSTMENT

| No. | Adjustment point | Adjustment Condition / Procedure | Waveform or others |
|---|---|---|---|
| 1 | **CRT CUTOFF ADJUSTMENT (I²C BUS CONTROL)** | 1. Receive the Monoscope pattern signal.<br>2. Select P-NORM with the remote controller.<br>3. Select the CUT OFF BKGD mode at the service mode.<br>4. Select the screen VR 0/10.<br>5. Press "-/--" key of the remote controller to select the lateral in-line mode.<br>6. Turn the screen VR clockwise, and adjust the first lighting lateral in-line raster to slightly light.<br>7. Adjust the CUT OFF data of two other colours, and coarsely adjust the lateral in-line to become white. (Note 1)<br>8. Turn the screen VR in the opposite direction to the point where the lateral in-line raster goes out.<br>Note 1: Apply the adjustment after aging with the beam current 1,600 ± 50µA or more for 30 min or more.<br>9. Press "-/--" key of the remote controller to select the normal mode. | On the monocolour screen of white or green. |
| 2 | **WHITE BALANCE BACKGROUND I²C BUS ADJUSTMENT (RF SIGNAL)** | 1. Receive the Monoscope pattern signal.<br>2. Select P-NORM with the remote controller.<br>3. Connect the beam ammeter between TP1601 and TP1602.<br>4. Coarsely adjust the beam current to approx. 1.8mA with R1633 (Sub-Contrast VR)<br>5. Receive the window pattern signal with AV input.<br>(PAL burst is generated with the signal generator.)<br>6. With the data of G-drive and B-drive, adjust the colour temperature 17,000°K or 18,000°K of the white peak to white.<br>7. Adjust the right dark area of the window to 17,000°K or 18,000°K with R-cut off, G-cut off and B-cut off.<br>8. Readjust the colour temperature at the white peak.<br>9. Check 17,000°K or 18,000°K at the low white.<br>Note : Apply this adjustment after aging with the beam current 1,600 ± 50µA or more for 30 min or more.<br>(On the white or green monocolour screen.)<br><br>* The colour temperature is based on the shipment initial setting table. | Note1:<br>R CUT OFF UP "1" KEY<br>DOWN "4" KEY<br>G CUT OFF UP "2" KEY<br>DOWN "5" KEY<br>B CUT OFF UP "3" KEY<br>DOWN "6" KEY<br>Data up/down is possible with the above comparison.<br>* 17,000°K X : 0.261<br>Y : 0.261<br>18,000°K X : 0.255<br>Y : 0.255<br>(With Monolta colour thermometer CA-100)<br>Note2:<br>G-DRIVE UP "7" KEY<br>DOWN " ⇄ " KEY<br>B-DRIVE UP "8" KEY<br>DOWN "0" KEY<br>Data up/down is possible with the above comparison. |
| 3 | **WHITE BALANCE BACKGROUND (CUT OFF DVD BKGD) I²C BUS ADJUSTMENT (DVD SIGNAL)** | 1. Receive the window pattern with DVD signal (component signal).<br>2. Apply the adjustment in the same manner as 2 (5) and the subsequence above. (17,000°K or 18,000°K) (G-DRIVE, B-DRIVE, R-CUT OFF, G-CUT OFF, B-CUT OFF)<br>Apply the adjustment after the end of 2. | Note : Use the window pattern of the signal generator for adjustment.<br>(PAL, colour burst is generated with signal generator) |



## CUT OFF, BKGD, SUB-CONT ADJUSTMENT

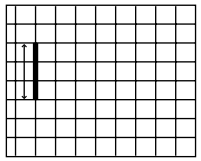
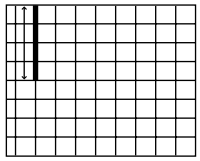
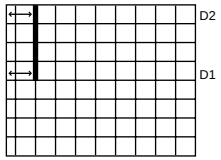
| No. | Adjustment point | Adjustment Condition / Procedure | Waveform or others |
|---|---|---|---|
| 4 | **MAX BEAM R1759** | 1. Receive the Monoscope pattern signal with standard mode.<br>2. Make the image normal with the remote controller.<br>3. Connect the beam ammeter between TP1601 and TP1602.<br>Ammeter full scale-3mA range<br>Connect the - side of the ammeter to TP1602.<br>Connect the + side of the ammeter to TP1601.<br>4. Adjust the beam current to 1.8mA ± 20µA with R1759 (sub-contrast VR).<br>Note: Apply the adjustment after aging with the beam current 1,600 ± 50µA or more for 30 min or more.<br>(On the white or green monocolour screen.) | |
| 5 | **SUB-CONTRAST (SUB-CONT) I²C BUS ADJUSTMENT (RF SIGNAL)** | 1. Receive the window pattern signal with AV input.<br>2. Make the image normal with the remote controller.<br>3. Select the SUB-CONTRAST adjustment mode with the remote controller, and adjust 50% white to 165 ± 10 cd. | Note:<br>Use "Y" of Minolta colour analyzer CA-100 in adjustment. |
| 6 | **SUB-CONTRAST (SUB-CONT DVD) I²C bus adjustment (DVD Signal)** | 1. Select the DVD mode.<br>2. Receive the signal of the DVD signal generator. (Component signal) (Window pattern)<br>3. Make the picture normal with the remote controller.<br>4. Select the SUB-CONTRAST adjustment mode (DVD) with the remote controller, and adjust 50% white to 165 ± 10 cd. | Note:<br>Use the PAL window pattern of the signal generator for adjustment.<br>(PAL and colour burst are provided.)<br>Note:<br>Window pattern<br>50%white for SUB-CONT<br>  <br>Dark white for SUB-BRIGHT |

## CUT OFF, BKGD, SUB-CONT ADJUSTMENT

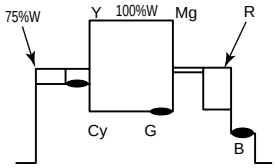
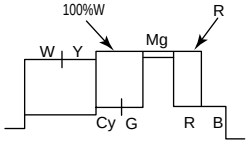
| No. | Adjustment point | Adjustment Condition / Procedure | Waveform or others |
|---|---|---|---|
| 7 | **SUB-BRIGHTNESS ADJUSMENT (SUB BRI) ($I^2C$ BUS CONTROL) (RF SIGNAL)** | 1. Receive the window pattern signal with AV input.<br>2. Make the image normal with the remote controller.<br>3. Select the sub-bright adjustment mode with the remote controller, and adjust the right dark white area of the window pattern to 5.5 ± 0.5 cd. | * Receive the Crosshatch pattern or equivalent signal.<br>1. Make the image normal with the remote controller.<br>2. Adjust the 3rd (1 thru 5 from the left) black of the window pattern to sink.<br> <br>CUT OFF POINT |
| 8 | **SUB-BRIGHTNESS (SUB BRI DVD) $I^2C$ bus adjustment (DVD SIGNAL)** | 1. Select the DVD mode.<br>2. Receive the signal of the DVD signal generator. (Component signal) (Window pattern)<br>3. Make the picture normal with the remote controller.<br>4. Select the SUB-BRIGHT adjustment mode (DVD) with the remote controller, and adjust the right dark white area of window pattern to 5.5 ± 0.5 cd of window pattern. | |



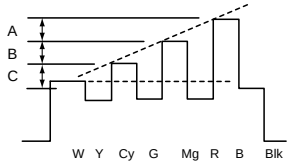
## HORIZONTAL, VERTICAL, DEFLECTION LOOP AND ADJUSTMENT

| No. | Adjustment point | Adjustment Condition / Procedure | Waveform or others |
|---|---|---|---|
| 1 | **V-AMP 50**<br>**V-LINE 50**<br>**V-S CORR50** | Adjust the overscan to 8.5% (E-5)<br>Adjust the linearity to the best. (E-2)<br>Already preset (**). (Adjust this unless the linearity is achieved.) (E-2) | The receiving channel in ( ) are the following signals.<br>(E-2) : Crosshatch (50Hz)<br>(E-5) : Monoscope (50Hz) |
| | **V-CENT50** | Align the center of the screen to the geometric center of CRT. (E-5) |  <br>**Fig.7-1** |
| | **H-CENT50** | Align the center of the screen to the geometric center of CRT. (E-5) | |
| | **H-SIZE50** | Adjust the overscan to 8.5% (E-5) | |
| | **E/W-PAR50** | Adjust the 2nd vertical line from the left end of crosshatch pattern so that the middle 4 blocks are straight. (E-2) (refer to **Fig.7-1**) | |
| | **EW-COR50** | Adjust the 2nd vertical line from the left end of crosshatch pattern so that the top are straight.(E-2) (Refer to **Fig.7-2**) |  <br>**Fig.7-2** |
| | **TRAPE50** | Adjust the 2nd vertical line from the left end of crosshatch pattern so that the D1 (centre area of the first vertical line-edge of screen) and D2 (top area of the first vertical line-edge of screen) are same. (Refer to **Fig.7-3**) | |
| | **V-ENT** | Already preset.(**) | |
| | **H-ENT** | Already preset.(**) |  <br>**Fig.7-3** |
| | **OTHER** | On the items of V-AMP60, V-LINE60, V-S CORR60, V-CENT60, H-CENT60, H-SIZE60, EW-PAR60, EW-COR60 andTRAPE60, the compensation data is automatically input if the 50Hz mode adjustment is done.<br><br>Attention:<br>Don't change 50 Hz mode data after adjust 60 Hz mode data. Because 60 Hz mode data follow 50 Hz mode data automatically. | However, if it is largely deviated when it is checked in the 60Hz mode, readjust it in the 60Hz mode. |

# PAL CHROMA ADJUSTMENT

| No. | Adjustment point | Adjustment Condition / Procedure | Waveform or others |
|---|---|---|---|
| 1 | **SUB COLOUR (I²C BUS CONTROL) (RF signal)** | 1. Receive the the PAL Colour Bar signal.<br>2. Make the picture normal with the remote controller.<br>3. Connect the oscilloscope to TP802 (pin (4) of KY) (Use Probe10:1)<br>Range : 2V/Div<br>Sweep time : 20µ sec/Div<br>4. Set the "SUB-COL" adjustment mode with the remote controller, and vary the sub colour data to make 75% W of the PAL colour bar and RED at the same level for adjustment shown in **Fig. 8**. |  **Fig. 8** |
| 2 | **SUB-COLOUR (SUB COL DVD) I²C bus adjustment (DVD signal)** | 1. Receive the DVD (half colour bar) signal.<br>2. Make the picture normal with the remote controller.<br>3. Connect the oscilloscope to TP802 (pin (4) of KY). (10:1 probe is used.)<br>Range : 2V/Div.<br>Sweep time : 20µsec/Div.<br>4. Set the "SUB COL DVD" adjustment mode with the remote controller, and vary the sub colour data to make 100%W of the colour bar and RED at the same level for adjustment shown in **Fig. 9**.<br>(Use the colour bar pattern of the signal generator for adjustment.) |  **Fig. 9** |

# NTSC CHROMA ADJUSTMENT

| No. | Adjustment point | Adjustment Condition / Procedure | Waveform or others |
|---|---|---|---|
| 1 | **SUB-TINT (SUB TINT) (I²C BUS CONTROL)** | 1. Select the sub-tint adjustment mode (automatic Y cut) to receive the NTSC colour bar signal with AV input.<br>2. Connect the oscilloscope to TP801.<br>Range : 50mV/Div (AC)<br>(Use Probe 10:1)<br>Sweep time : 10µsec/Div<br>3. Vary the sub tint data to adjust the waveform to be gained as shown in **Fig 10**.<br>TP801……(KY) 6 pin |  **Fig.10**<br>A=B=C |
| 2 | **SUB-TINT (SUB TINT DVD) I²C bus adjustment (DVD Signal)** | 1. Select the "SUB-TINT DVD" adjustment mode (automatic Y cut) to receive the DVD colour bar signal.<br>2. Connect the oscilloscope to TP801.<br>Range :50m/V/Div. (AC)<br>Sweep time : 10µsec/Div. (use Probe 10:1)<br>3. Vary the sub tint data to adjust the waveform to be gained as shown in **Fig.10**.<br>4. Release/off the adjustment mode.<br>TP801 ..... (KY) 6pin<br><br>(Use the colour bar pattern of the signal generator for adjustment) | |

## FUNCTION OPERATION CHECKING (1) (VIDEO & AUDIO)

| No. | Adjustment point | Adjustment Condition / Procedure | Waveform or others |
|---|---|---|---|
| 1 | **CONTRAST Key** | 1. Receive the Monoscope Pattern signal.<br>2. Press to Menu mode, then select Picture Mode and set to select CONTRAST.<br>3. Press Volume Up/Down key to check whether the CONTRAST effect is OK or not. | |
| 2 | **COLOUR Key** | 1. Receive the Colour Bar signal.<br>2. Press to Menu mode, then select Picture Mode and set to select COLOUR.<br>3. Press Volume Up/Down key to check whether the COLOUR effect is OK or not. | |
| 3 | **BRIGHTNESS Key** | 1. Receive the Monoscope Pattern signal.<br>2. Press to Menu mode, then select Picture Mode and set to select BRIGHTNESS.<br>3. Press Volume Up/Down key to check whether the BRIGHTNESS effect is OK or not. | |
| 4 | **TINT Key** | 1. Receive the NTSC Colour Bar signal thru AV input.<br>2. Press to Menu mode, then select Picture Mode and set to select TINT.<br>3. Press Volume Up/Down key to check TINT, UP for GREEN direction and DOWN for RED direction whether is OK or not. | |
| 5 | **SHARPNESS Key** | 1. Receive the Monoscope Pattern signal.<br>2. Press to Menu mode, then select Picture Mode and set to select SHARPNESS.<br>3. Press Volume Up/Down key to check whether the SHARPNESS effect is OK or not. | |
| 6 | **NORMAL Key** | 1. Once in PICTURE Mode, and the NORMAL key is pressed, all the settings will be present to normal setting.<br>(Normal setting value for every mode, refer on page 8.) | Note:<br>If nothing is display mean contrast, colour, brightness, tint, sharpness are all in normal setting. |
| 7 | **WHITE TEMP** | 1. Receive the Monoscope Pattern signal.<br>2. Set FUNCTION to select WHITE TEMP.<br>3. Press Volume Up/Down key to check WHITE TEMP Option, STANDARD: NORMAL SETTING, WARM for more REDDISH direction changing, COOL for more BLUISH direction changing. | |



## FUNCTION OPERATION CHECKING (2) (VIDEO & AUDIO)

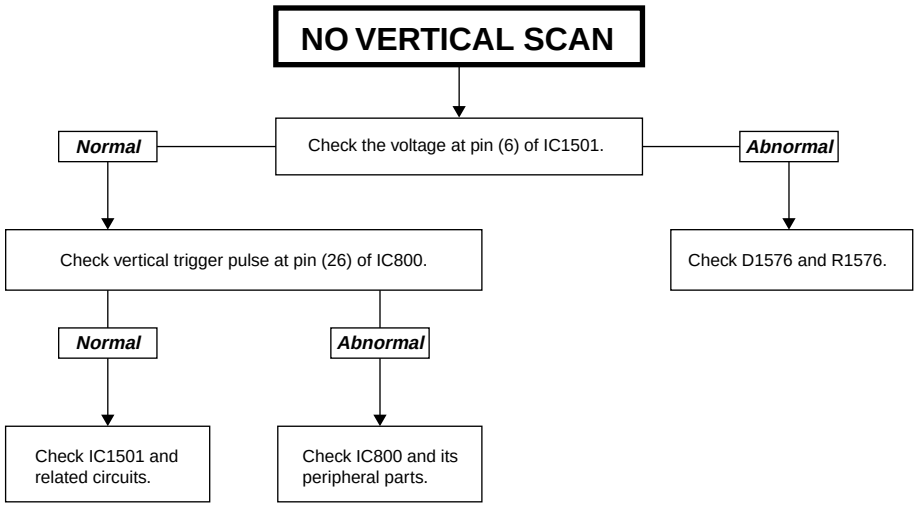
| No. | Adjustment point | Adjustment Condition / Procedure | Waveform or others |
|---|---|---|---|
| 8 | **HEADPHONE OUTPUT CHECKING** | 1. Receive the PAL Colour Bar signal with sound 400 Hz, 100% modulation (± 50kHz Dev)<br>2. Maximum volume, and check the headphone output with 400 Hz sound and no sound out from speaker.<br>(Ref: Output Level of Headphone is as Following:) | |

| SUB-VOL Adj. | H/P Output (Open) |
|---|---|
| 63 | 1.0 Vp-p |
| 40 | 500 mVp-p |

## PROTECTOR OPERATION CHECK

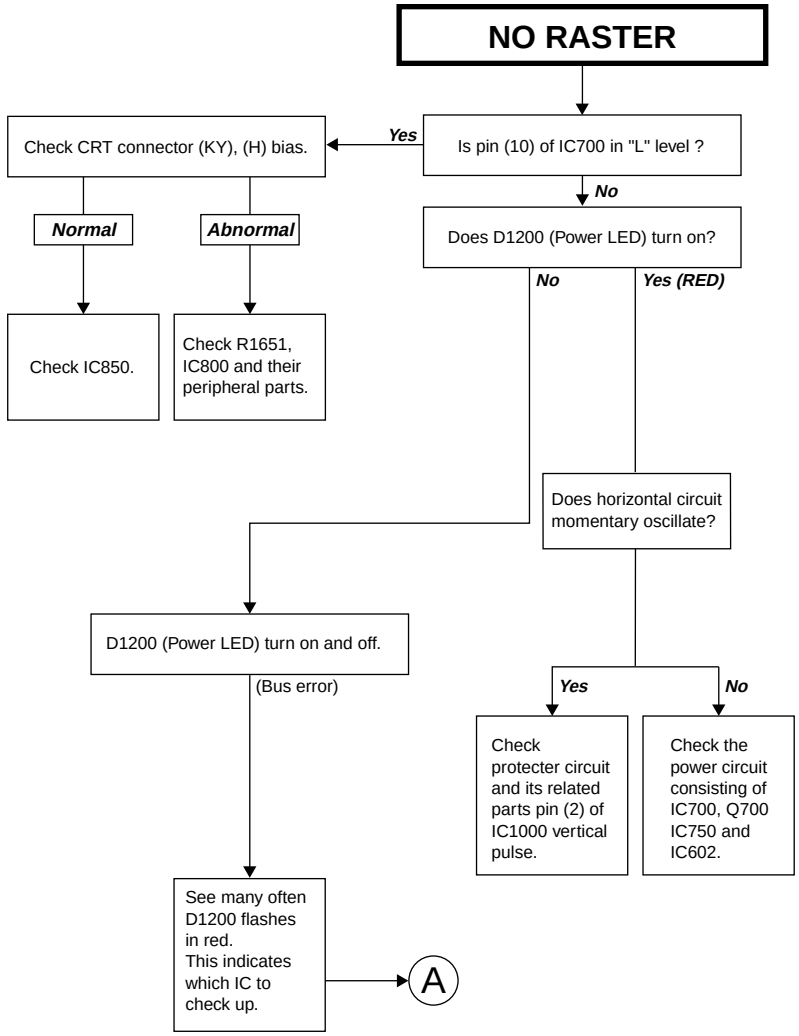
| No. | Checking Item | Adjustment Condition / Procedure | Waveform or others |
|---|---|---|---|
| 1 | **H.V Protector** | 1. Receive the Monoscope pattern signal.<br>2. Connect the bias box to the cathode side (R1662 side) of D1621.<br>3. Set the voltage of the bias box at 15V, and verify that the protector does not operate.<br>4. Set the voltage of the bias box at 24V, and verify that the protector does operate. | Reference Approx. 17.7 V as ordinary. |
| 2 | **Other protectors** | Correspondence for short circiut of smoothening electrolysis of +B line and so on.<br>To check the operation of the protector and so on, take care for the breakage, deterioration and so on of each element. | |

# TROUBLE SHOOTING TABLE

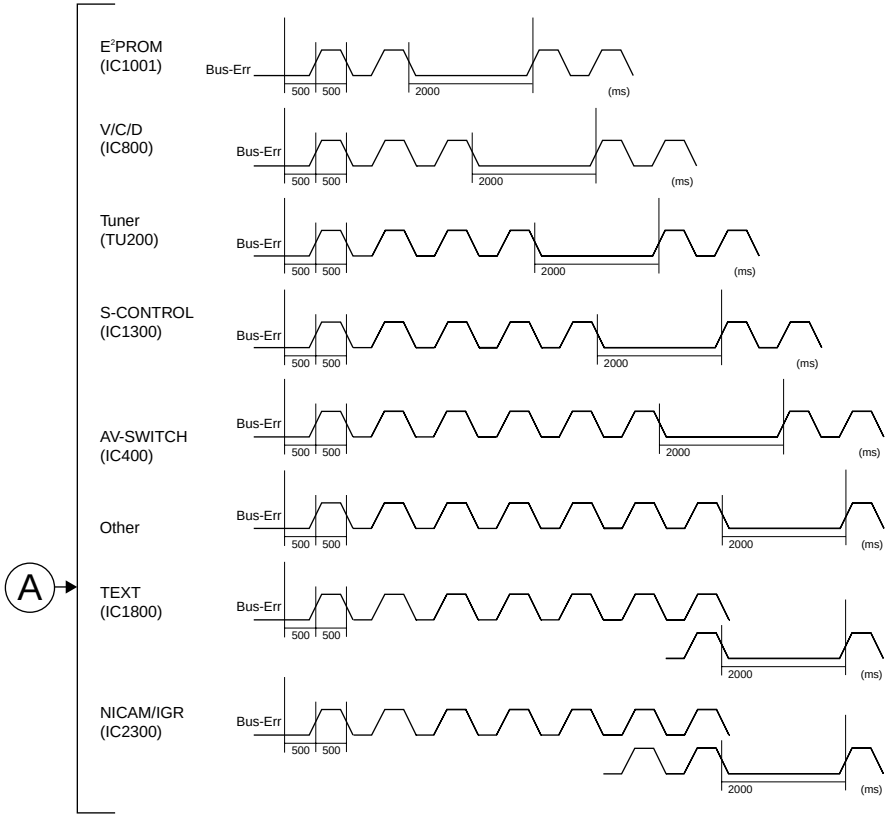





# TROUBLE SHOOTING TABLE (Continued)

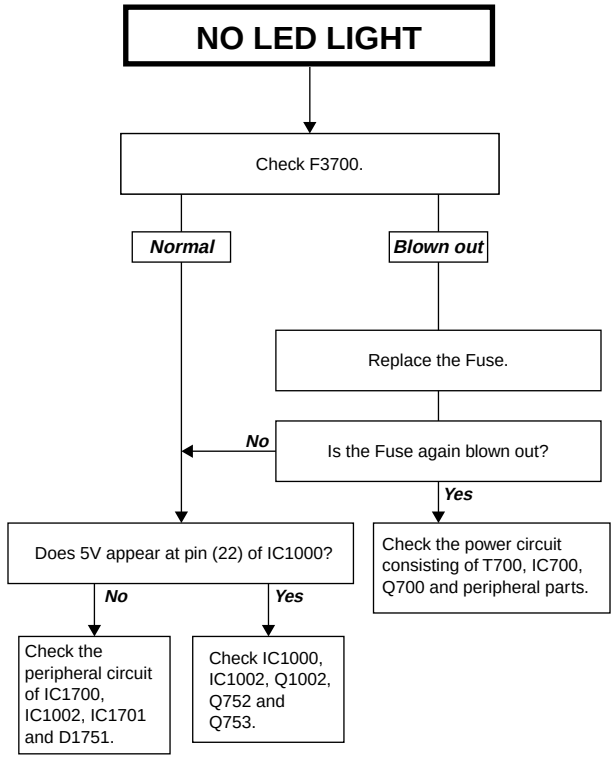

NO RASTER
Is pin (10) of IC700 in "L" level ?
Yes
No
Check CRT connector (KY), (H) bias.
Does D1200 (Power LED) turn on?
Normal
Abnormal
No
Yes (RED)
Check IC850.
Check R1651, IC800 and their peripheral parts.
Does horizontal circuit momentary oscillate?
D1200 (Power LED) turn on and off.
(Bus error)
Yes
No
Check protecter circuit and its related parts pin (2) of IC1000 vertical pulse.
Check the power circuit consisting of IC700, Q700 IC750 and IC602.
See many often D1200 flashes in red.
This indicates which IC to check up.
A

# TROUBLE SHOOTING TABLE (Continued)

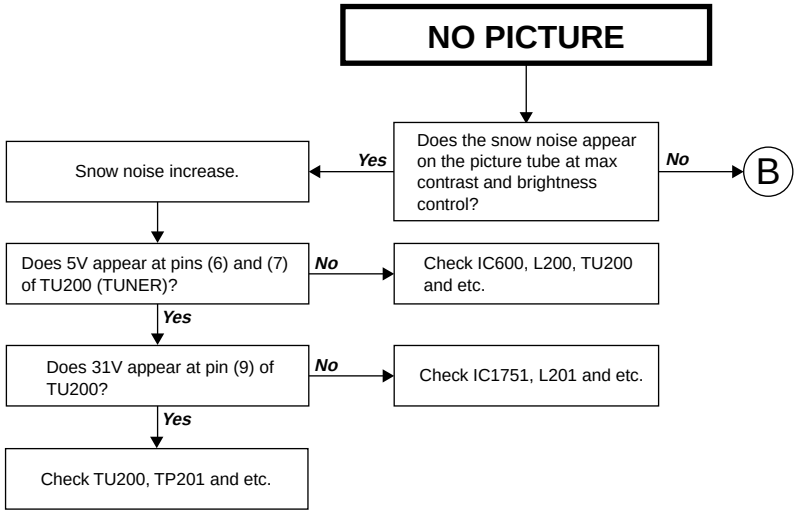





# TROUBLE SHOOTING TABLE (Continued)

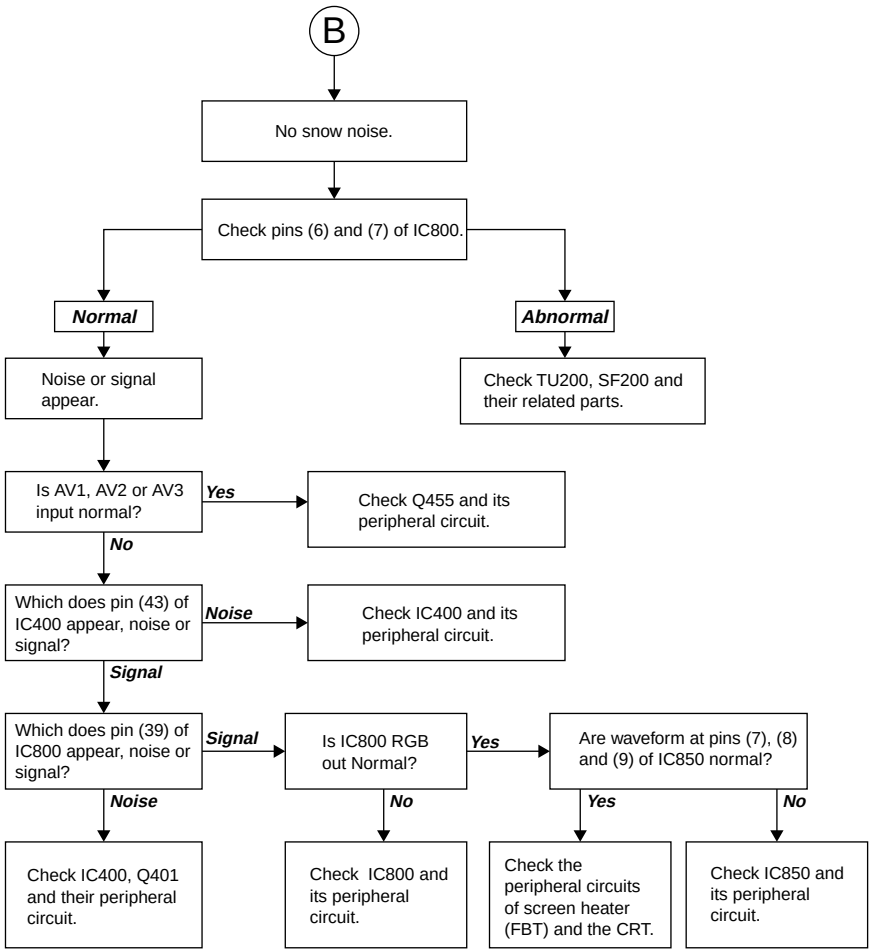

NO LED LIGHT
Check F3700.
Normal
Blown out
Replace the Fuse.
No
Is the Fuse again blown out?
Yes
Does 5V appear at pin (22) of IC1000?
Check the power circuit consisting of T700, IC700, Q700 and peripheral parts.
No
Yes
Check the peripheral circuit of IC1700, IC1002, IC1701 and D1751.
Check IC1000, IC1002, Q1002, Q752 and Q753.

# TROUBLE SHOOTING TABLE (Continued)

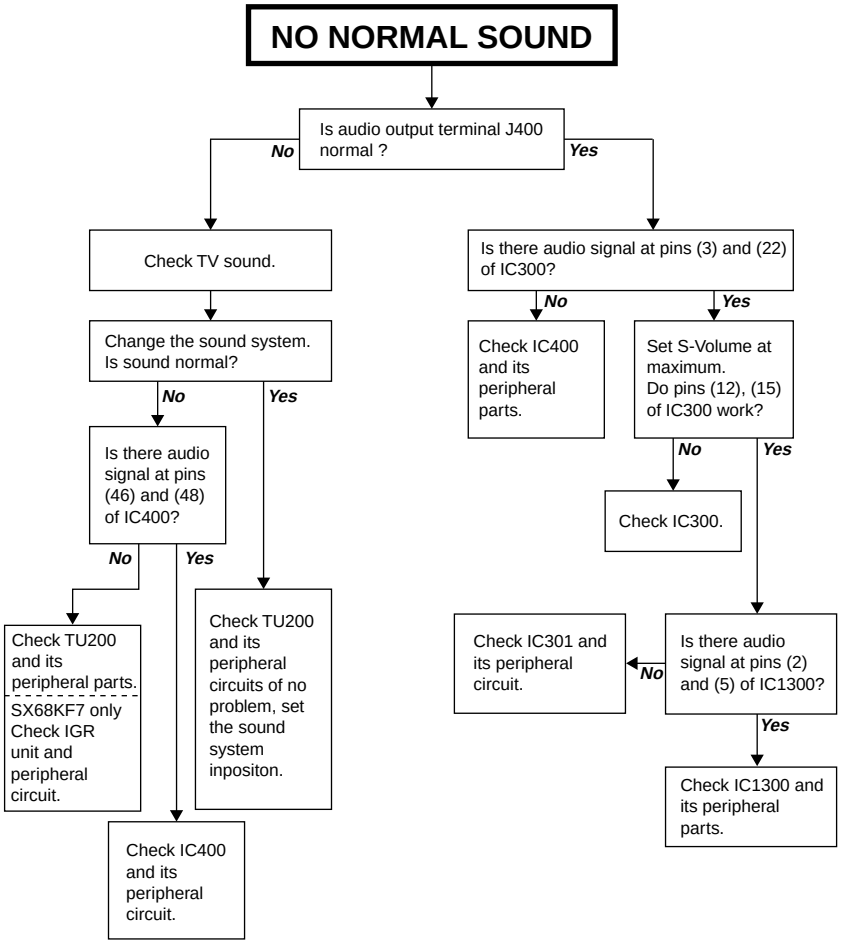

NO PICTURE
Does the snow noise appear on the picture tube at max contrast and brightness control?
Yes
No
B
Snow noise increase.
Does 5V appear at pins (6) and (7) of TU200 (TUNER)?
No
Check IC600, L200, TU200 and etc.
Yes
Does 31V appear at pin (9) of TU200?
No
Check IC1751, L201 and etc.
Yes
Check TU200, TP201 and etc.



# TROUBLE SHOOTING TABLE (Continued)

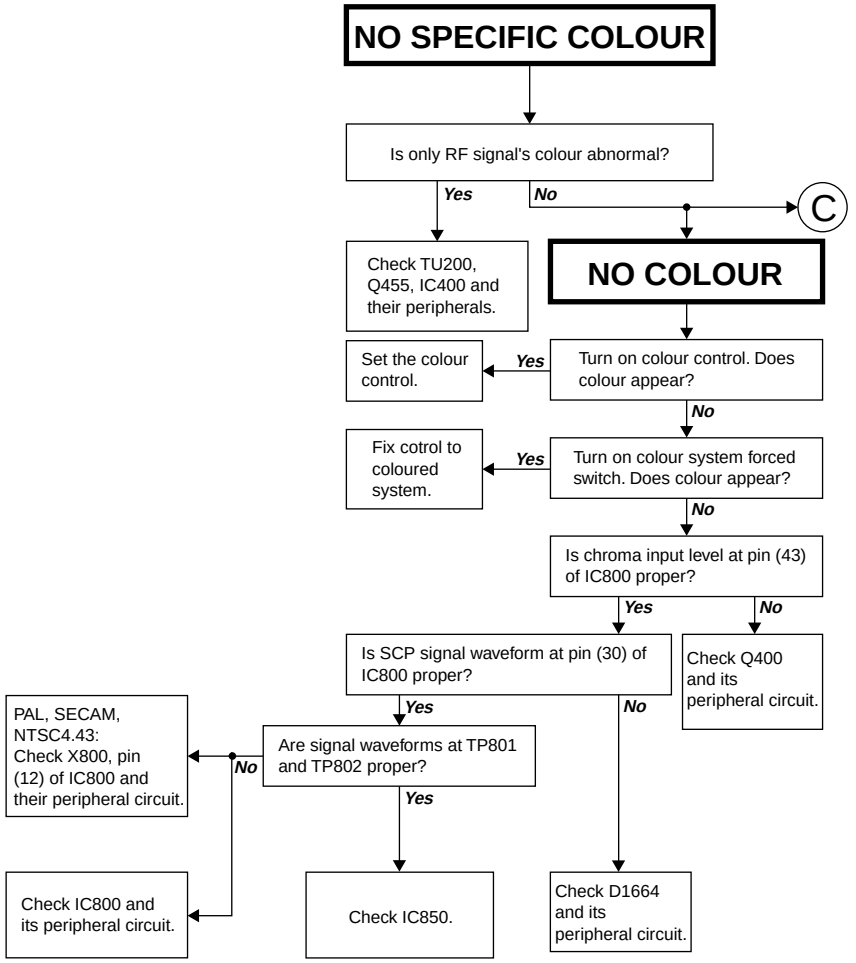

B
No snow noise.
Check pins (6) and (7) of IC800.
Normal
Abnormal
Noise or signal appear.
Check TU200, SF200 and their related parts.
Is AV1, AV2 or AV3 input normal?
Yes
Check Q455 and its peripheral circuit.
No
Which does pin (43) of IC400 appear, noise or signal?
Noise
Check IC400 and its peripheral circuit.
Signal
Which does pin (39) of IC800 appear, noise or signal?
Signal
Is IC800 RGB out Normal?
Yes
Are waveform at pins (7), (8) and (9) of IC850 normal?
Noise
No
Yes
No
Check IC400, Q401 and their peripheral circuit.
Check IC800 and its peripheral circuit.
Check the peripheral circuits of screen heater (FBT) and the CRT.
Check IC850 and its peripheral circuit.

# TROUBLE SHOOTING TABLE (Continued)

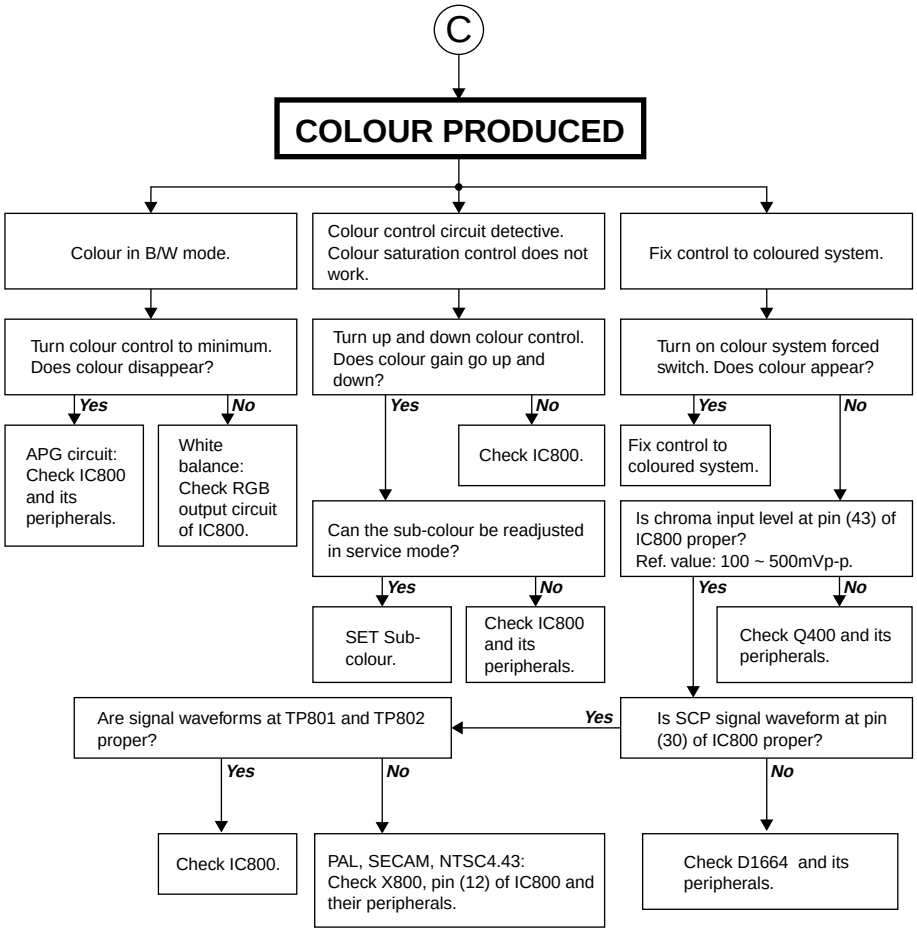

NO NORMAL SOUND
Is audio output terminal J400 normal ?
No
Yes
Check TV sound.
Change the sound system. Is sound normal?
No
Yes
Is there audio signal at pins (46) and (48) of IC400?
No
Yes
Check TU200 and its peripheral parts.
SX68KF7 only Check IGR unit and peripheral circuit.
Check TU200 and its peripheral circuits of no problem, set the sound system inpositon.
Check IC400 and its peripheral circuit.
Is there audio signal at pins (3) and (22) of IC300?
No
Yes
Check IC400 and its peripheral parts.
Set S-Volume at maximum. Do pins (12), (15) of IC300 work?
No
Yes
Check IC300.
Check IC301 and its peripheral circuit.
No
Is there audio signal at pins (2) and (5) of IC1300?
Yes
Check IC1300 and its peripheral parts.



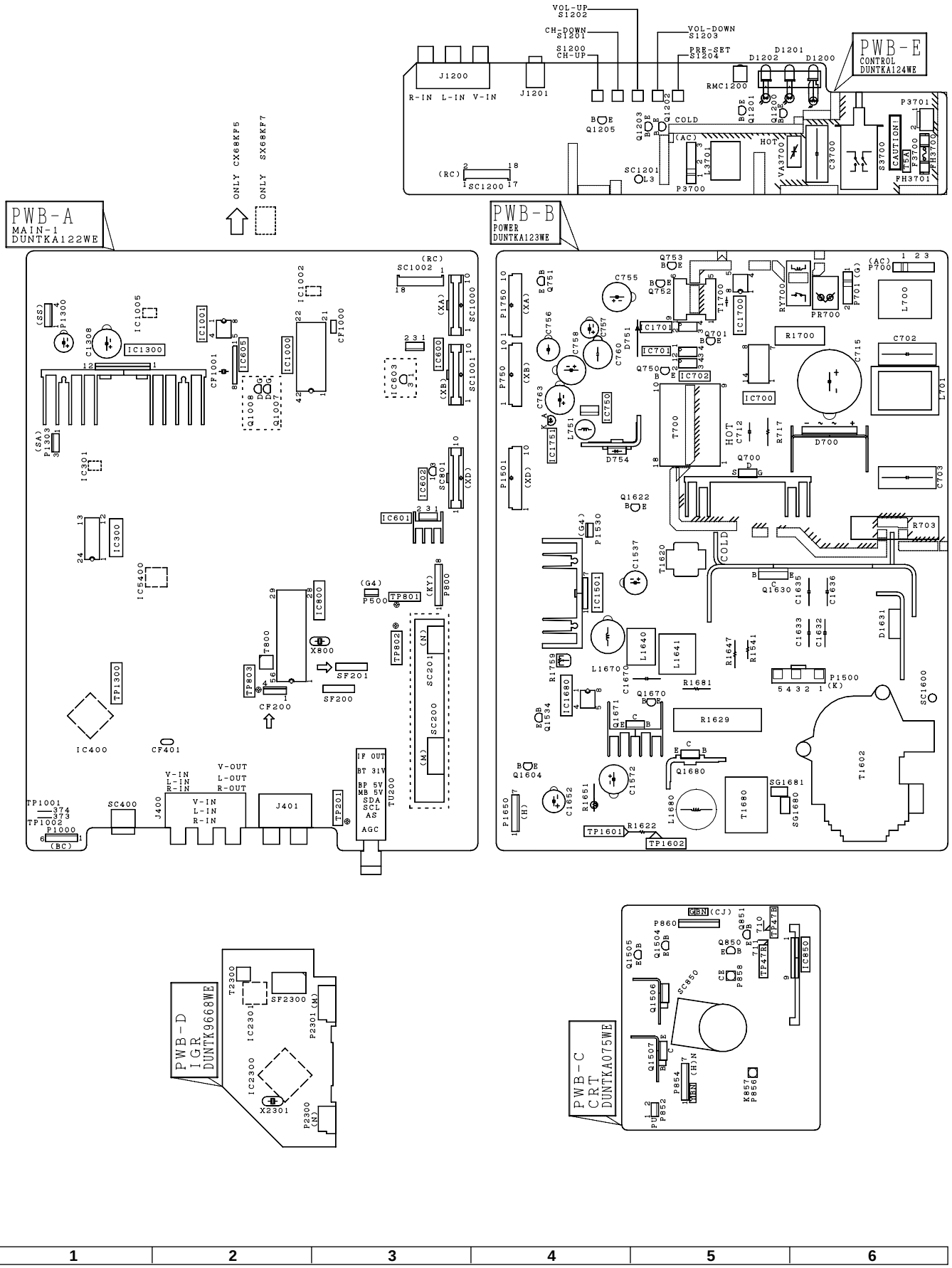
# TROUBLE SHOOTING TABLE (Continued)


NO SPECIFIC COLOUR
Is only RF signal's colour abnormal?
Yes
No
C
Check TU200, Q455, IC400 and their peripherals.
NO COLOUR
Set the colour control.
Yes
Turn on colour control. Does colour appear?
No
Fix cotrol to coloured system.
Yes
Turn on colour system forced switch. Does colour appear?
No
Is chroma input level at pin (43) of IC800 proper?
Yes
No
Is SCP signal waveform at pin (30) of IC800 proper?
Check Q400 and its peripheral circuit.
Yes
No
PAL, SECAM, NTSC4.43: Check X800, pin (12) of IC800 and their peripheral circuit.
No
Are signal waveforms at TP801 and TP802 proper?
Yes
Check IC800 and its peripheral circuit.
Check IC850.
Check D1664 and its peripheral circuit.

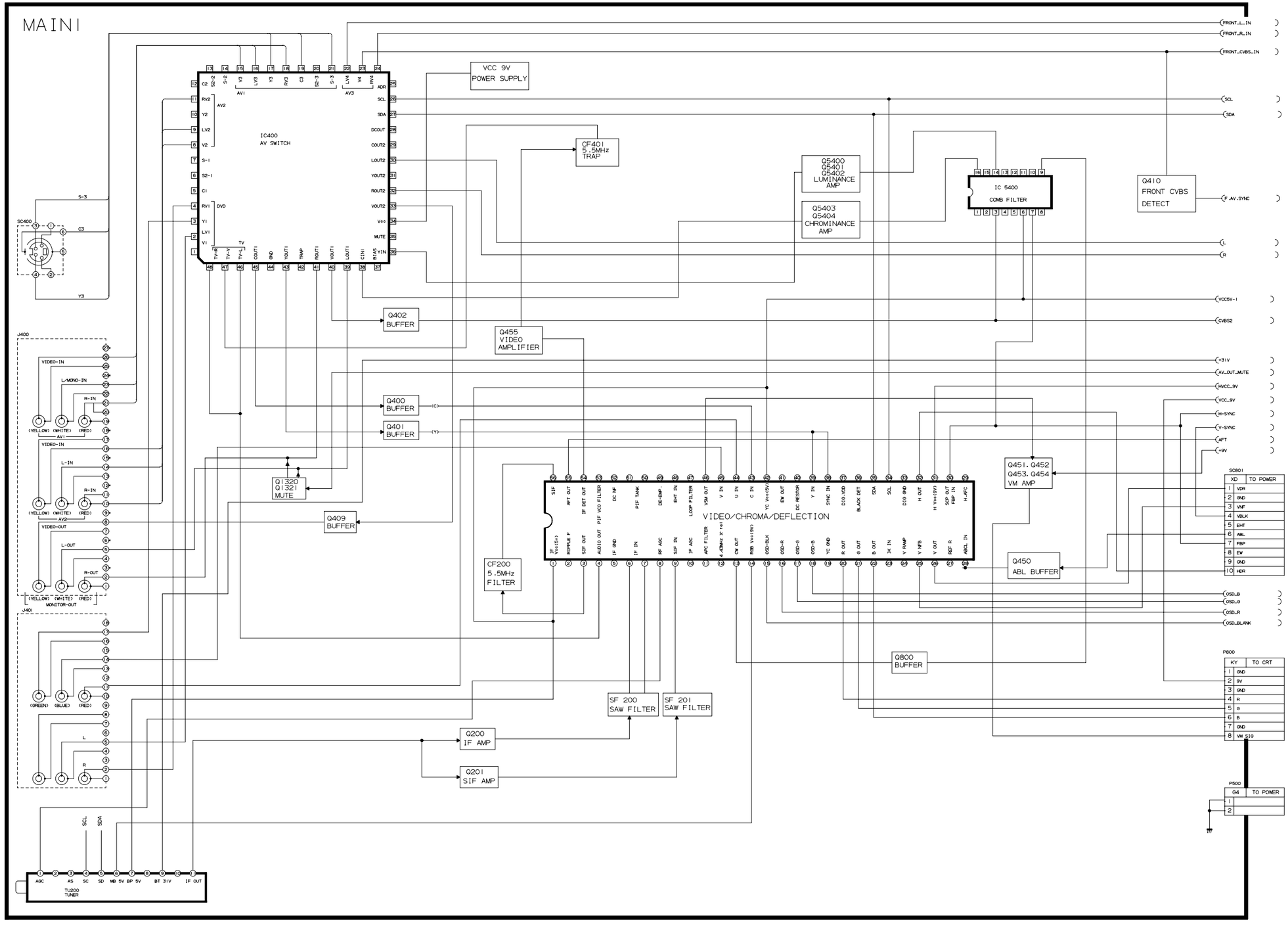
# TROUBLE SHOOTING TABLE (Continued)


C
COLOUR PRODUCED
Colour in B/W mode.
Colour control circuit detective. Colour saturation control does not work.
Fix control to coloured system.
Turn colour control to minimum. Does colour disappear?
Turn up and down colour control. Does colour gain go up and down?
Turn on colour system forced switch. Does colour appear?
Yes
No
APG circuit: Check IC800 and its peripherals.
White balance: Check RGB output circuit of IC800.
Check IC800.
Fix control to coloured system.
Can the sub-colour be readjusted in service mode?
Is chroma input level at pin (43) of IC800 proper? Ref. value: 100 ~ 500mVp-p.
SET Sub-colour.
Check IC800 and its peripherals.
Check Q400 and its peripherals.
Are signal waveforms at TP801 and TP802 proper?
Is SCP signal waveform at pin (30) of IC800 proper?
Check IC800.
PAL, SECAM, NTSC4.43: Check X800, pin (12) of IC800 and their peripherals.
Check D1664 and its peripherals.

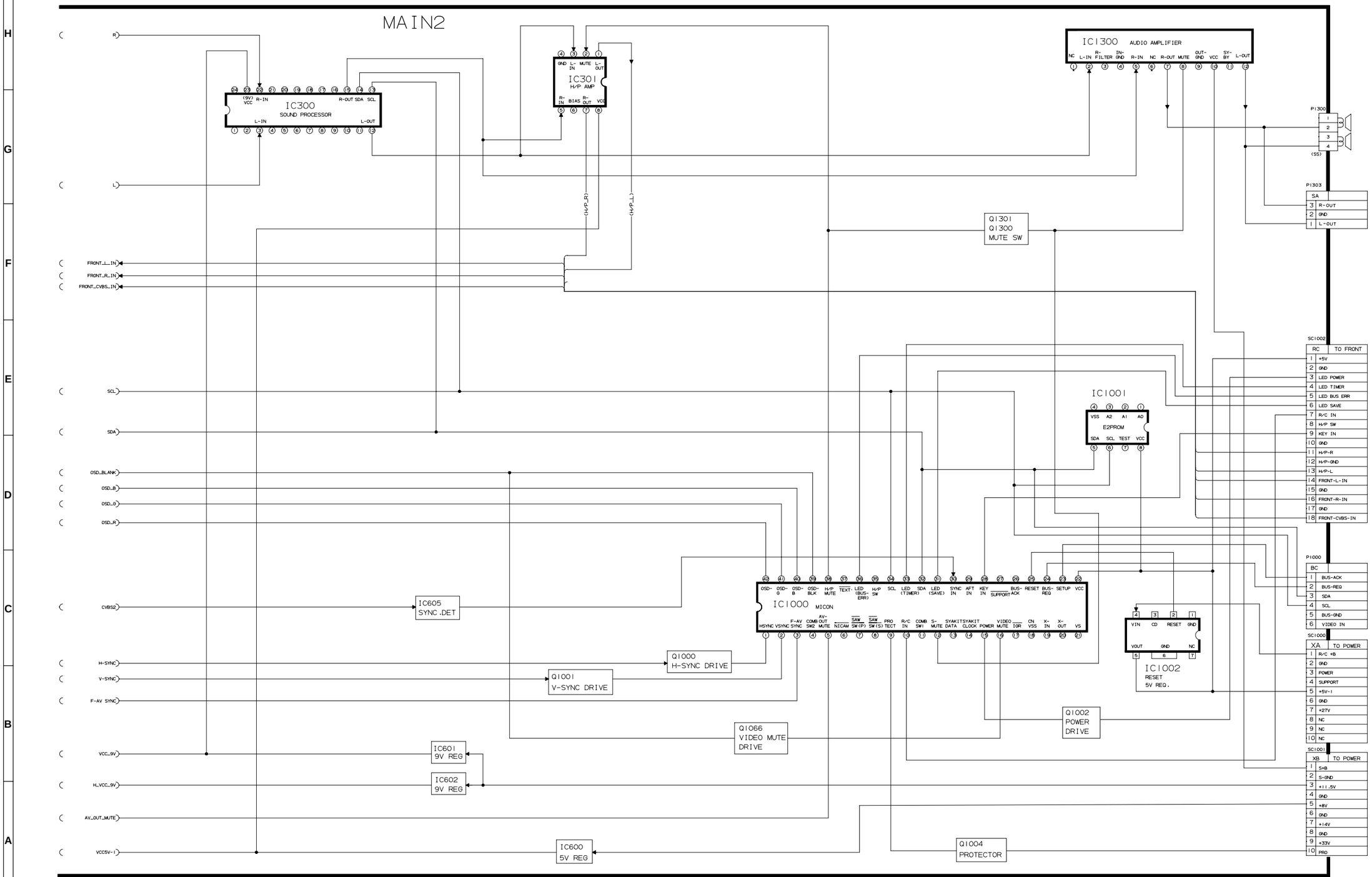
# CHASSIS LAYOUT



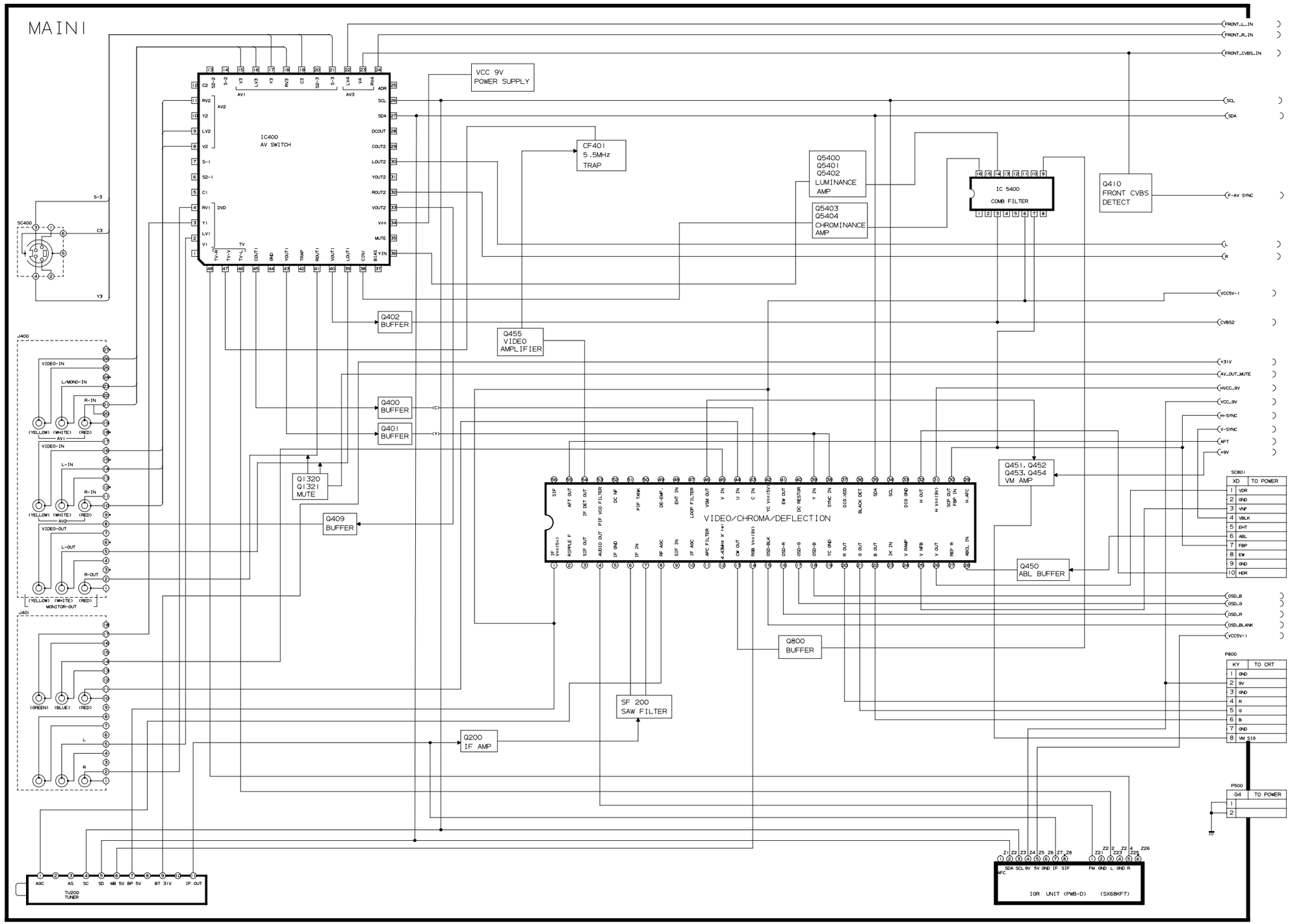
# MODEL CX68KF5 BLOCK DIAGRAM-1



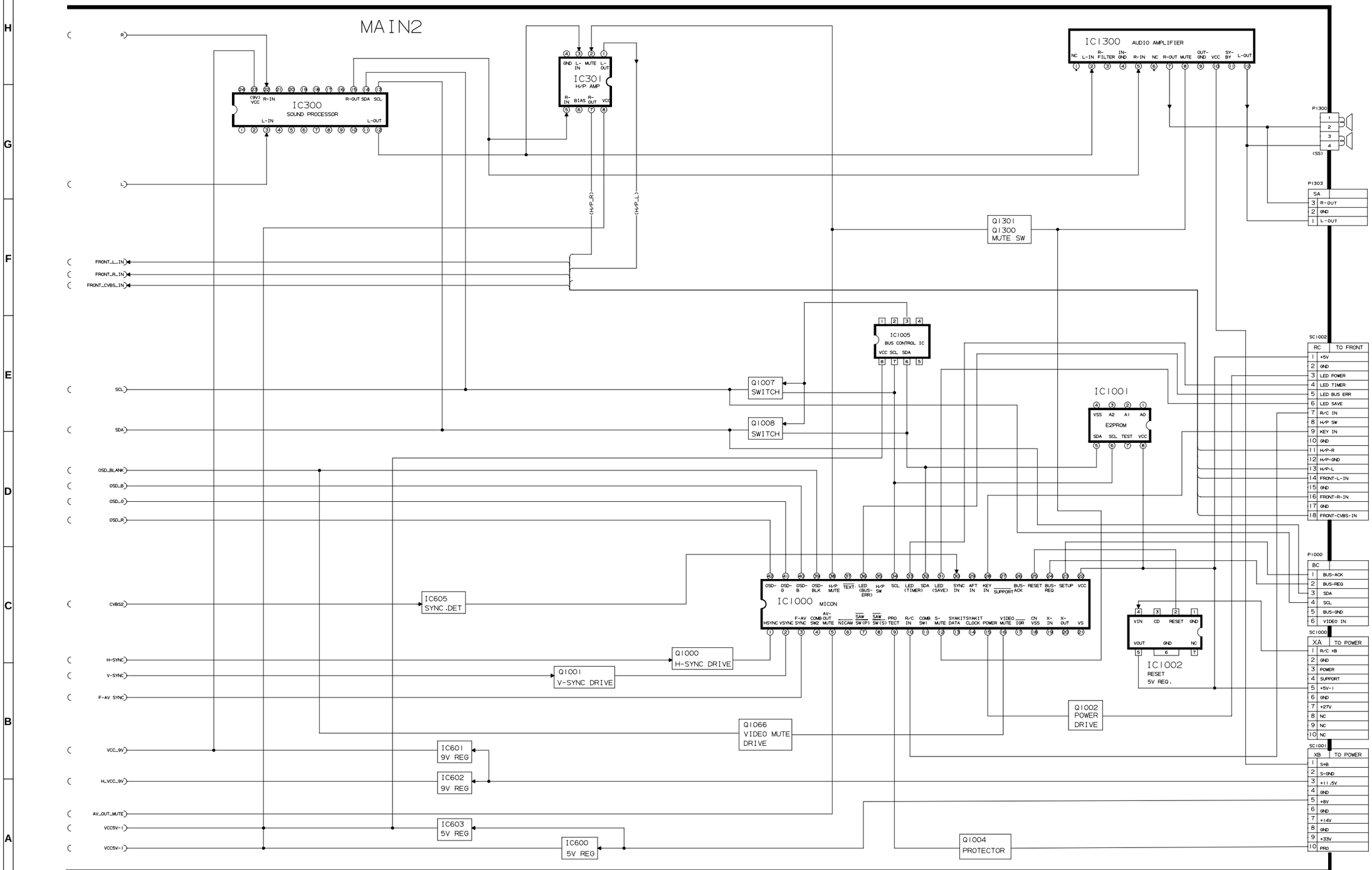
# MODEL CX68KF5 BLOCK DIAGRAM-2



# MODEL SX68KF7 BLOCK DIAGRAM-1



# MODEL SX68KF7 BLOCK DIAGRAM-2



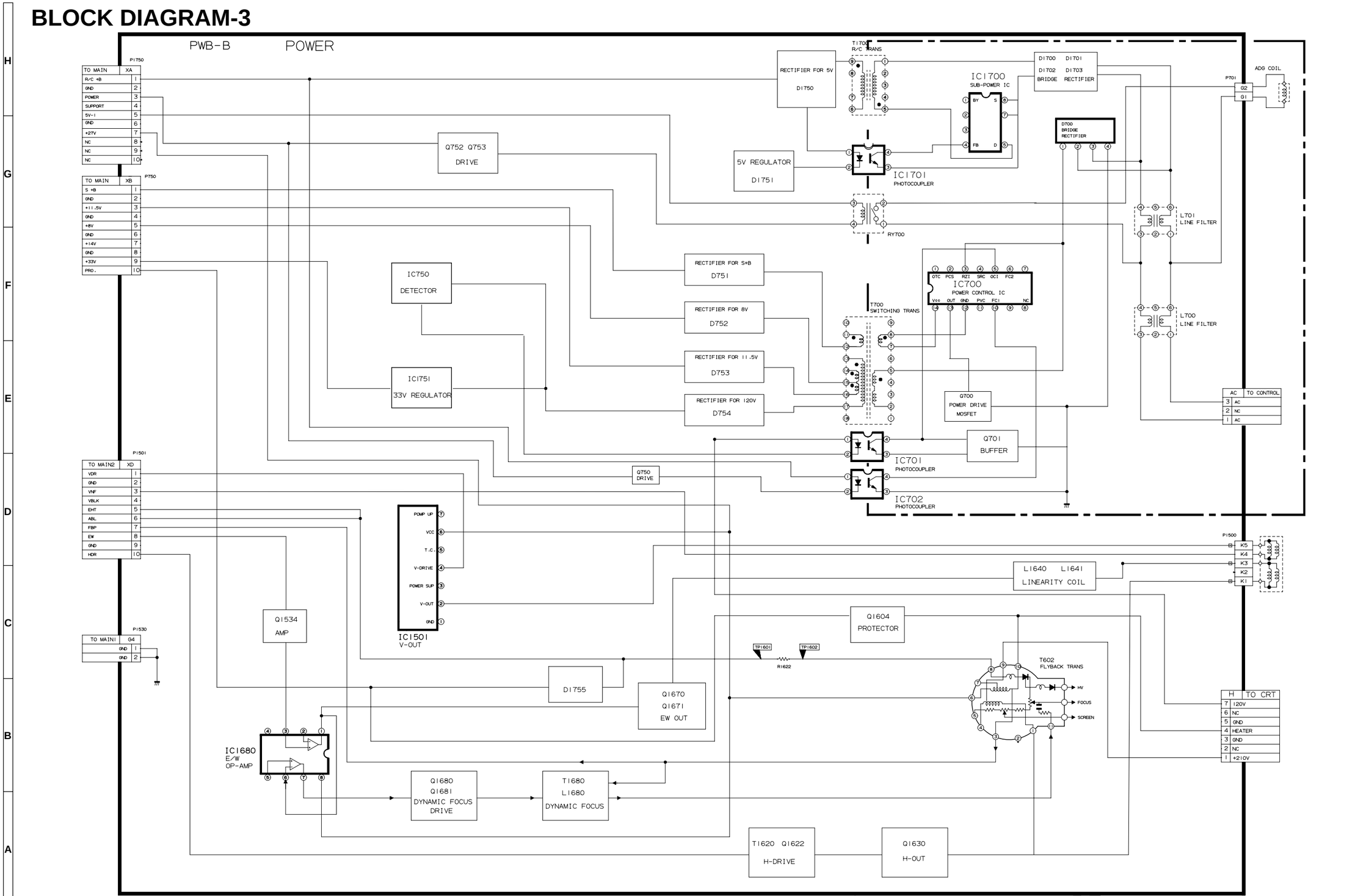

| SC1002 | TO FRONT |
|---|---|
| 1 | +5V |
| 2 | GND |
| 3 | LED POWER |
| 4 | LED TIMER |
| 5 | LED BUS ERR |
| 6 | LED SAVE |
| 7 | R/C IN |
| 8 | H/P SW |
| 9 | KEY IN |
| 10 | GND |
| 11 | H/P-R |
| 12 | H/P-GND |
| 13 | H/P-L |
| 14 | FRONT-L-IN |
| 15 | GND |
| 16 | FRONT-R-IN |
| 17 | GND |
| 18 | FRONT-CVBS-IN |

| P1000 BC | |
|---|---|
| 1 | BUS-ACK |
| 2 | BUS-REQ |
| 3 | SDA |
| 4 | SCL |
| 5 | BUS-GND |
| 6 | VIDEO IN |

| SC1000 XA | TO POWER |
|---|---|
| 1 | R/C +B |
| 2 | GND |
| 3 | POWER |
| 4 | SUPPORT |
| 5 | +5V-1 |
| 6 | GND |
| 7 | +27V |
| 8 | NC |
| 9 | NC |
| 10 | NC |

| SC1001 XB | TO POWER |
|---|---|
| 1 | S+B |
| 2 | S-GND |
| 3 | +11.5V |
| 4 | GND |
| 5 | +8V |
| 6 | GND |
| 7 | +14V |
| 8 | GND |
| 9 | +33V |
| 10 | PRO |

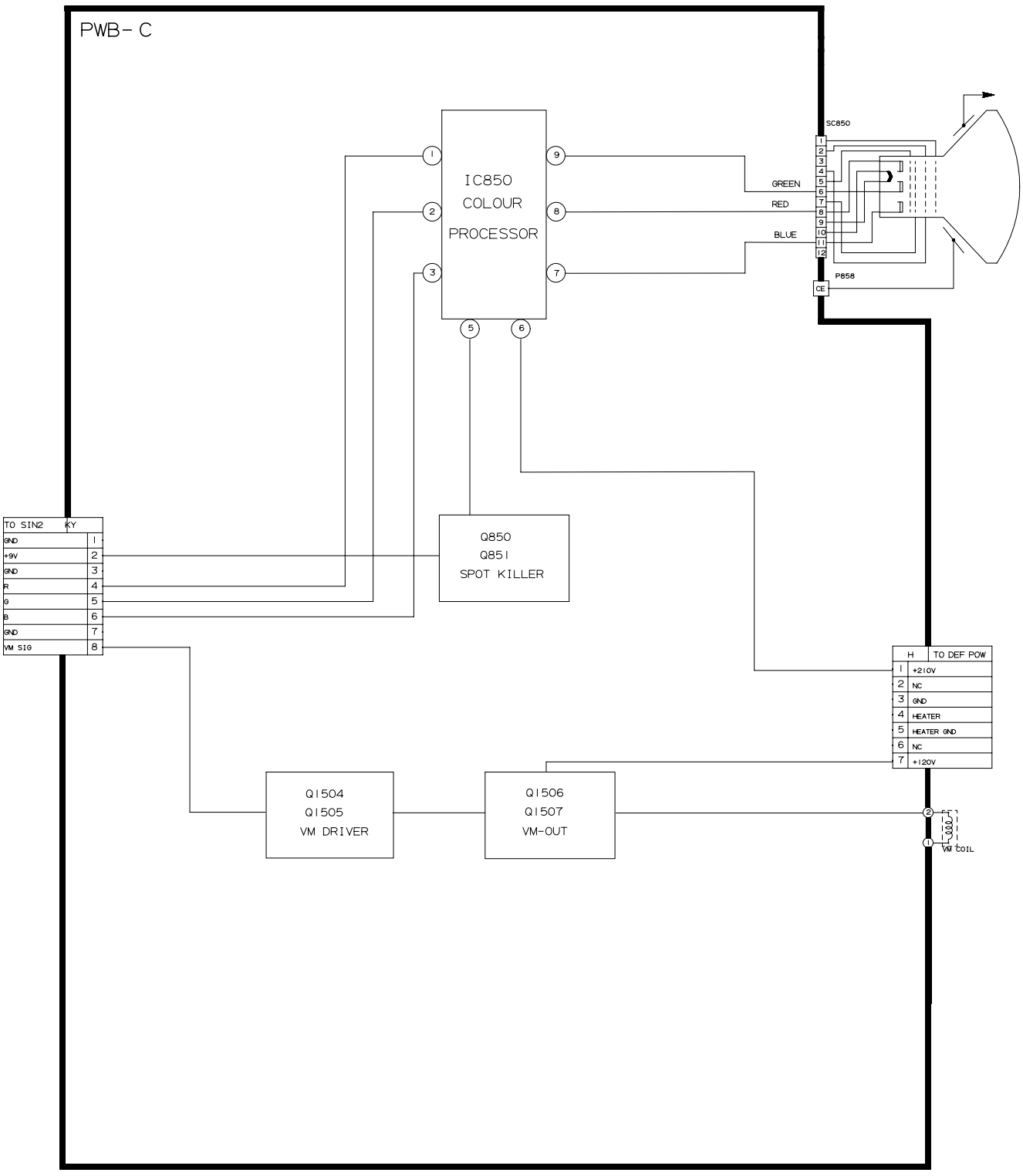
# BLOCK DIAGRAM-3



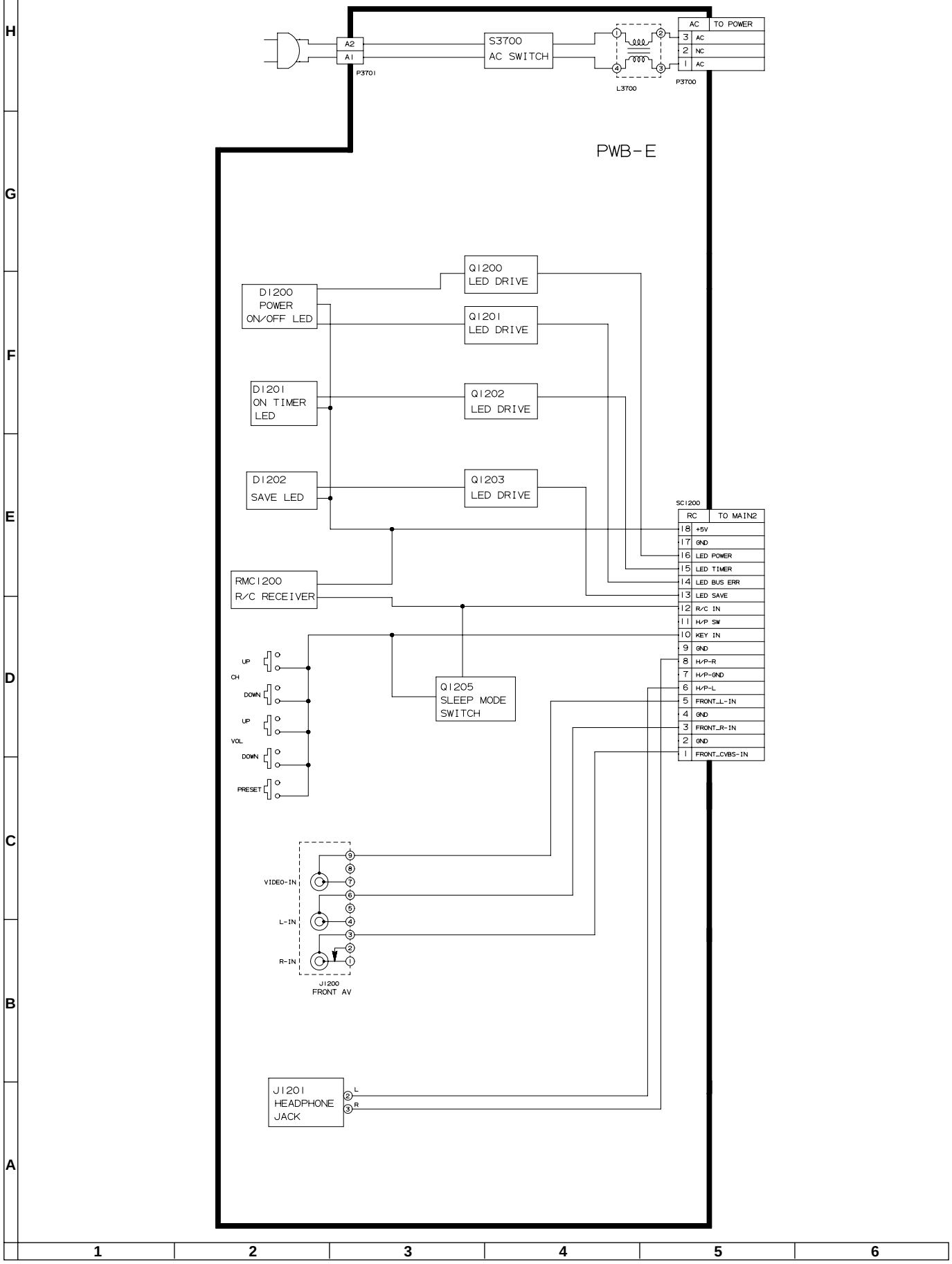

H G F E D C B A

1 2 3 4 5 6 7 8 9 10 11 12

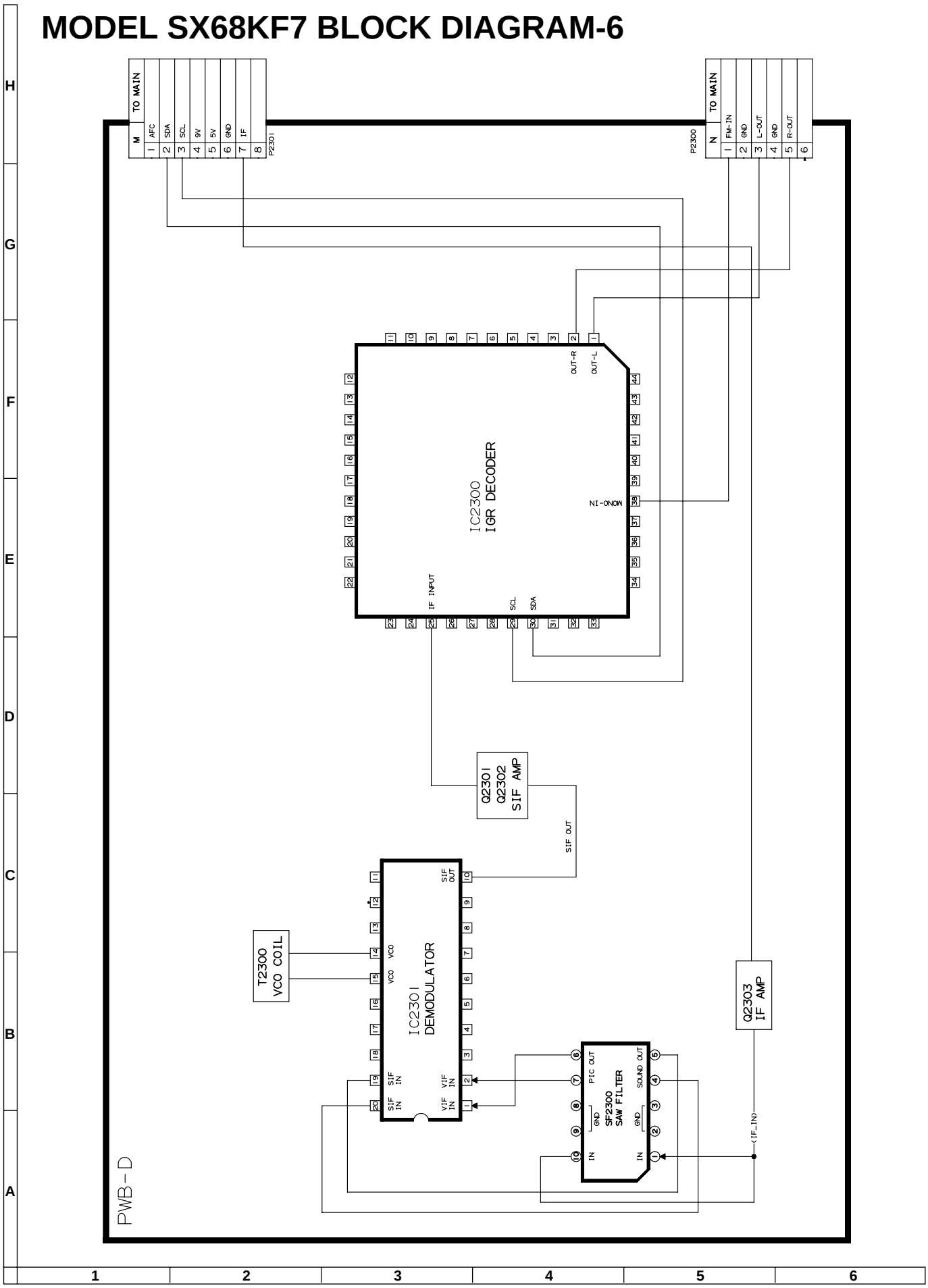
# BLOCK DIAGRAM-4



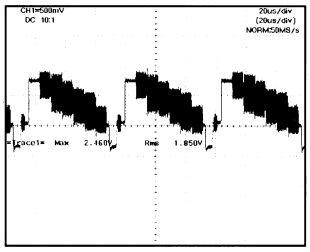
# BLOCK DIAGRAM-5



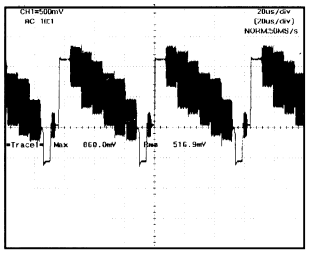
# MODEL SX68KF7 BLOCK DIAGRAM-6



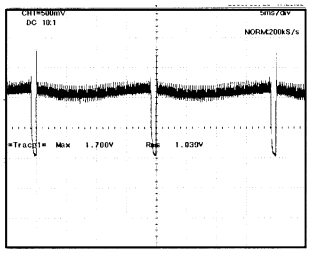
# WAVEFORMS



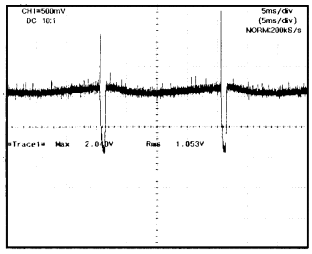
Pin 1 Vp-p=2.46v



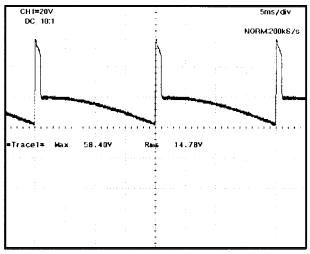
Pin 2 Vp-p=1.8v



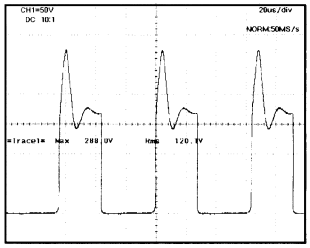
Pin 3 Vp-p=1.7v



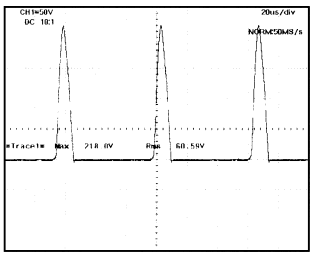
Pin 4 Vp-p=2.04v



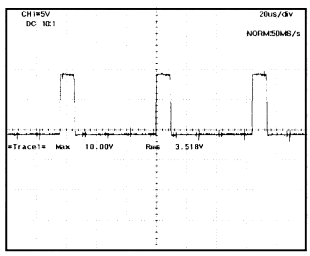
Pin 5 Vp-p=58.4v



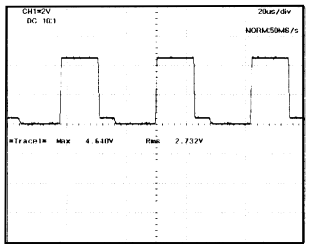
Pin 6 Vp-p=288v



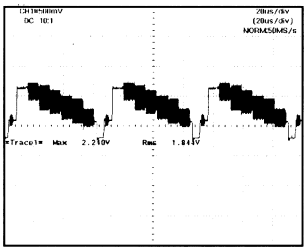
Pin 7 Vp-p=1090v



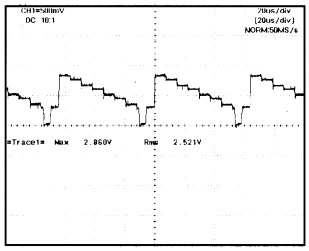
Pin 8 Vp-p=10v



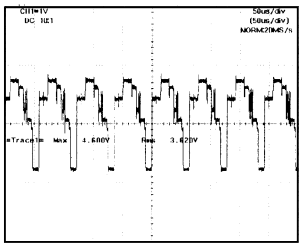
Pin 9 Vp-p=4.64v



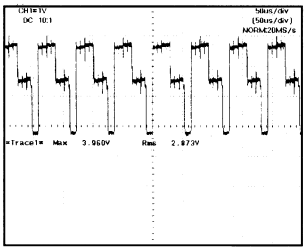
Pin 10 Vp-p=1.0v



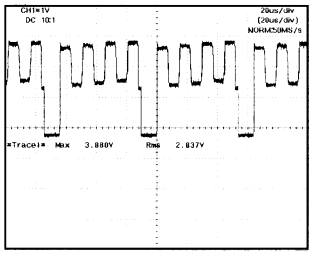
Pin 11 Vp-p=1.0v



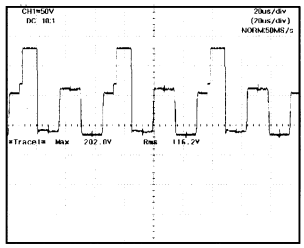
Pin 12 Vp-p=4.6v



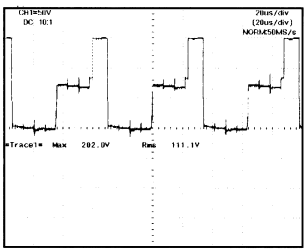
Pin 13 Vp-p=3.96v



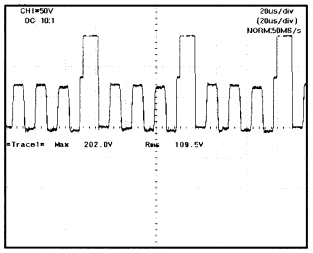
Pin 14 Vp-p=3.88v



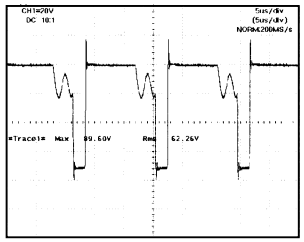
Pin 15 Vp-p=150.0v



Pin 16 Vp-p=150.0v



Pin 17 Vp-p=150.0v



Pin 18 Vp-p=448.0v

# DESCRIPTION OF SCHEMATIC DIAGRAM

### *SAFETY NOTES:*

1. *DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACING PARTS.*
2. *SEMICONDUCTOR HEAT SINKS SHOULD BE REGARDED AS POTENTIAL SHOCK HAZARDS WHEN THE CHASSIS IS OPERATING.*

### *IMPORTANT SAFETY NOTICE:*

*PARTS MARKED WITH "⚠" ( ) ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET. BE SURE TO REPLACE THESE PARTS WITH SPECIFIED ONES FOR MAINTAINING THE SAFETY AND PERFORMANCE OF THE SET.*

### *SERVICE PRECAUTION:*

*THE AREA ENCLOSED BY THIS LINE ( ) IS DIRECTLY CONNECTED WITH AC MAINS VOLTAGE.*
*WHEN SERVICING THE AREA, CONNECT AN ISOLATING TRANSFORMER BETWEEN TV RECEIVER AND AC LINE TO ELIMINATE HAZARD OF ELECTRIC SHOCK.*

### *NOTES:*

1. *The unit of resistance "ohm" is omitted. (K = 1000 ohms, M = Meg ohm).*
2. *All resistors are 1/16 watt, unless otherwise noted.*
3. *All capacitors are μF, unless therwise noted. (P = μμF).*

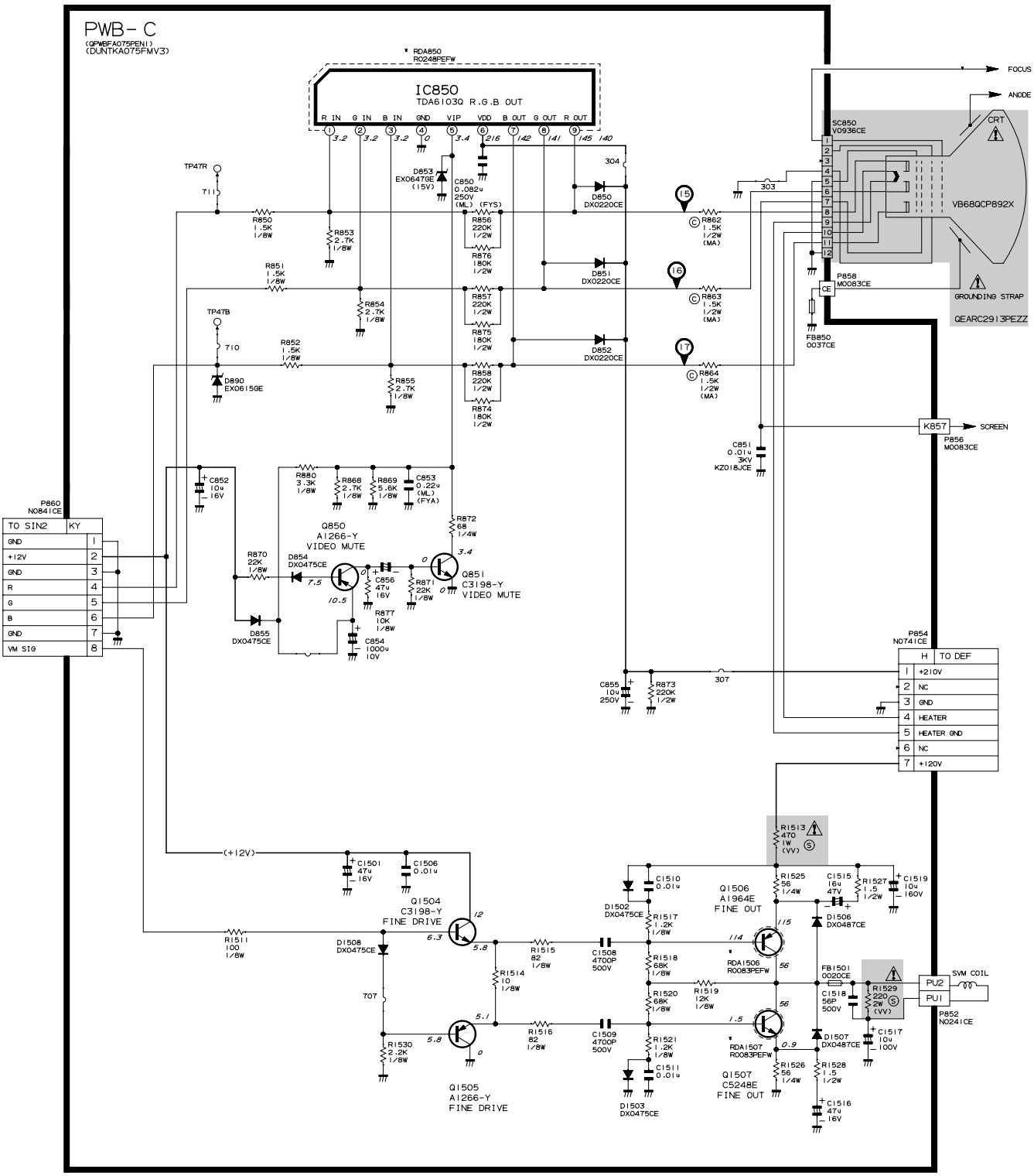
### *VOLTAGE MEASUREMENT CONDITIONS:*

1. *Voltage in parenthesis measured with no Signal.*
2. *Voltages without parenthesis measured with PAL Colour-Signal.*
3. *All the voltages in each point are measured with high impedence volt-meter.*

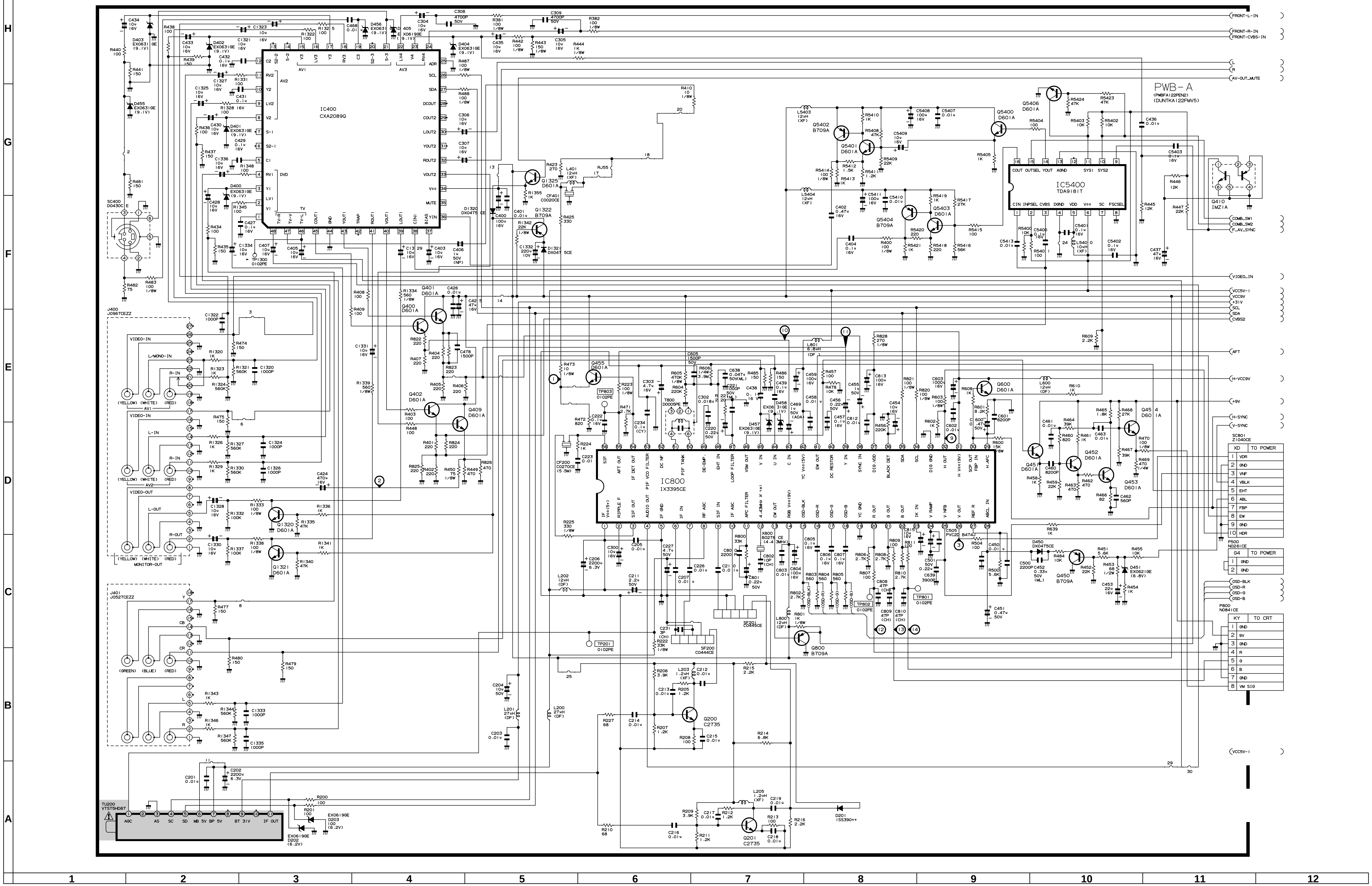
### *WAVEFORM MEASUREMENT CONDITIONS:*

1. *Colour bar generator signal of 2.5V peak to peak applied at Base of Video Buffer Amp. Q203.*
2. *Approximately 4.0 V AGC bias.*

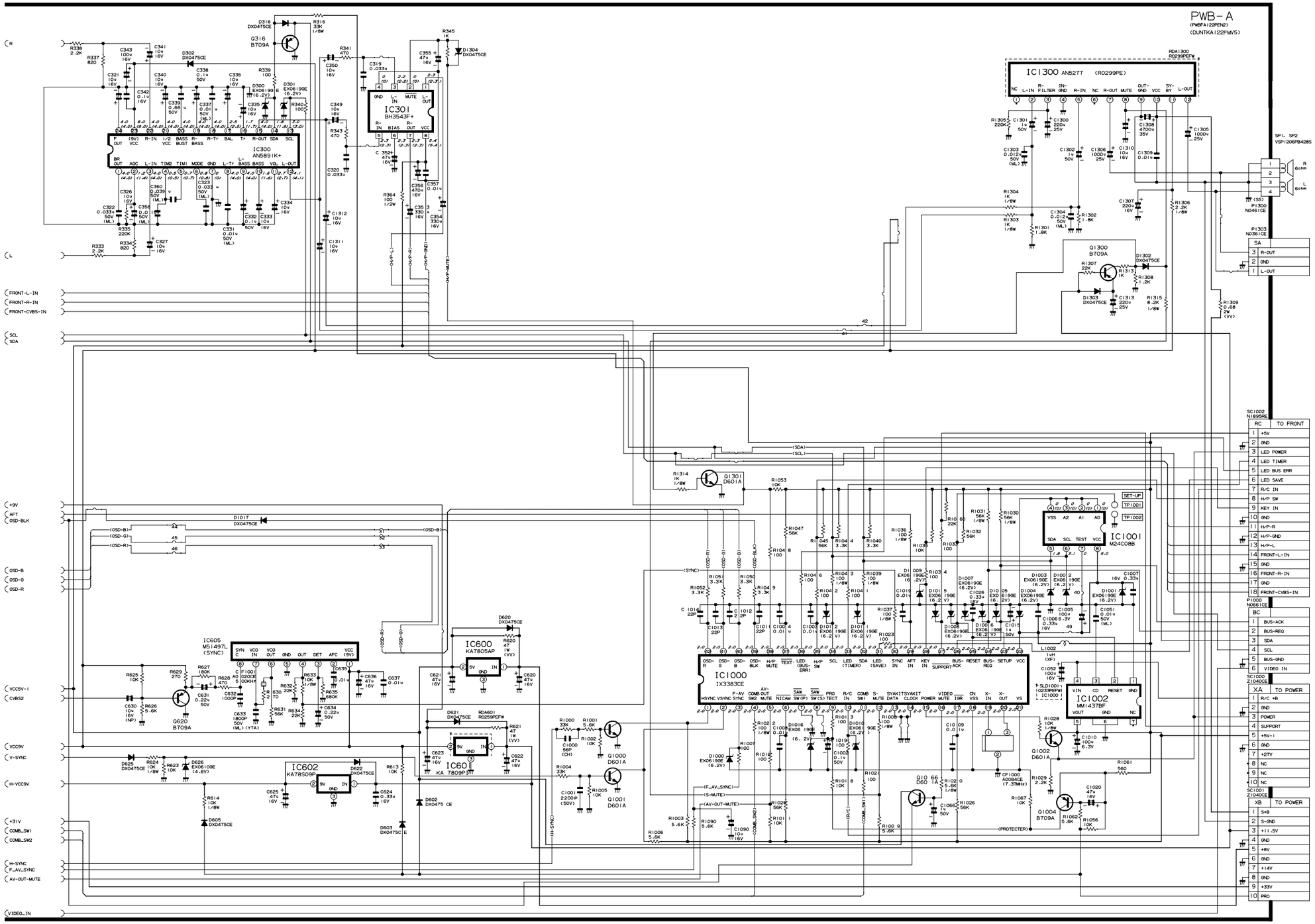
# SCHEMATIC DIAGRAM: CRT Unit



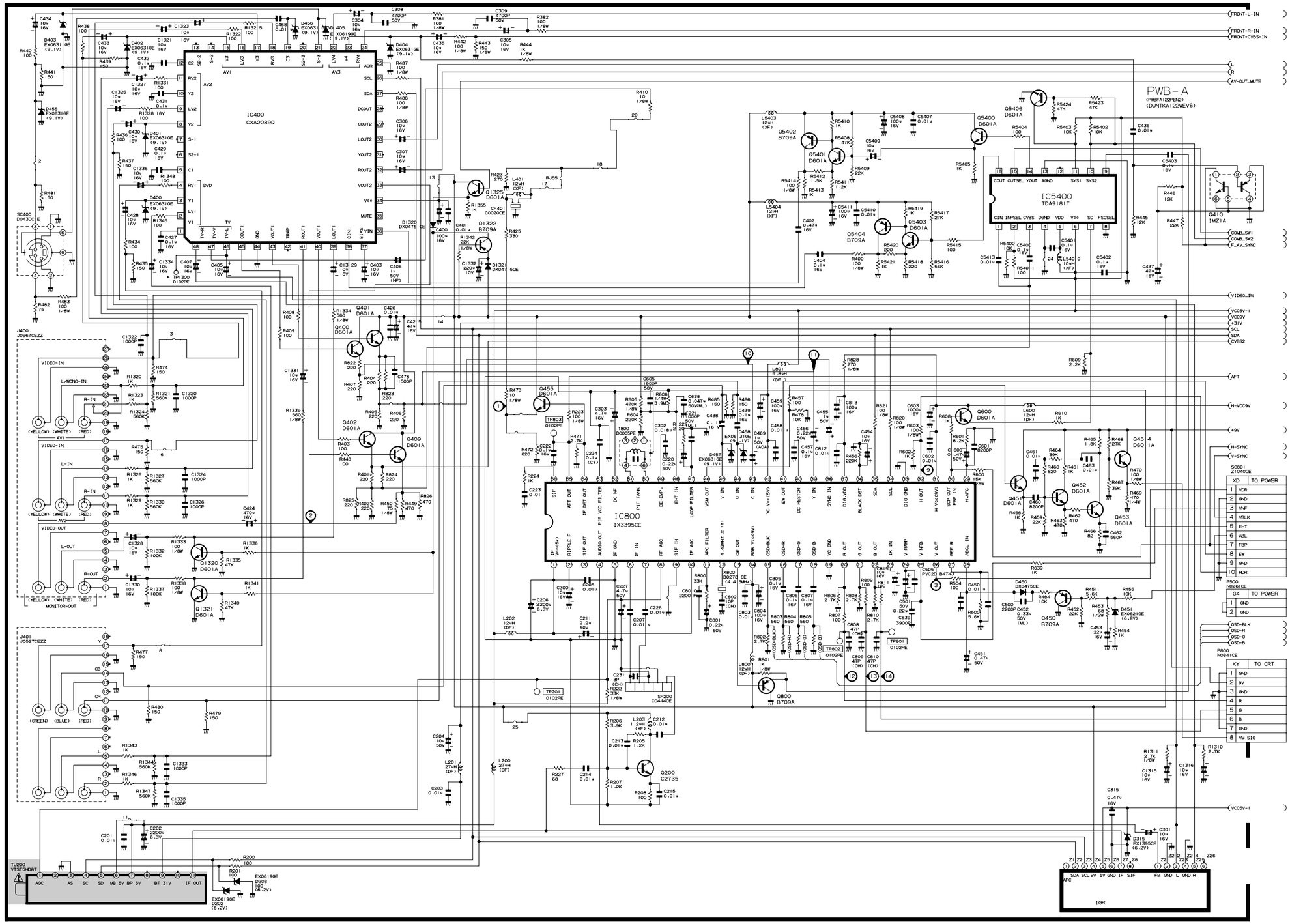
# MODEL CX68KF5 SCHEMATIC DIAGRAM: MAIN-1 Unit


PWB-A
(PWBFA122PEN2)
(DUNTKA122FMV5)
IC400
CXA2089Q
IC5400
TDA9181T
IC800
IX3395CE
J400
J0967CEZZ
J401
J0527CEZZ
SC400
D0430CE
TU200
VTST5HD87
AGC AS SC SD MB 5V BP 5V BT 31V IF OUT
VIDEO-IN
L/MONO-IN
R-IN
(YELLOW) (WHITE) (RED)
AV1
L-IN
AV2
VIDEO-OUT
L-OUT
R-OUT
MONITOR-OUT
(GREEN) (BLUE) (RED)
FRONT-L-IN
FRONT-R-IN
FRONT-CVBS-IN
L
R
AV-OUT_MUTE
COMB_SW1
COMB_SW2
F_AV_SYNC
VIDEO_IN
VCC5V-1
VCC9V
+31V
SCL
SDA
CVBS2
AFT
H-VCC9V
+9V
H-SYNC
V-SYNC
SC801
Z1040CE
XD TO POWER
1 VDR
2 GND
3 VNF
4 VBLK
5 EHT
6 ABL
7 FBP
8 EW
9 GND
10 HDR
P500
N0261CE
G4 TO POWER
1 GND
2 GND
OSD-BLK
OSD-R
OSD-G
OSD-B
P800
N0841CE
KY TO CRT
1 GND
2 9V
3 GND
4 R
5 G
6 B
7 GND
8 VM SIG
VCC5V-1

# MODEL CX68KF5 SCHEMATIC DIAGRAM: MAIN-2 Unit

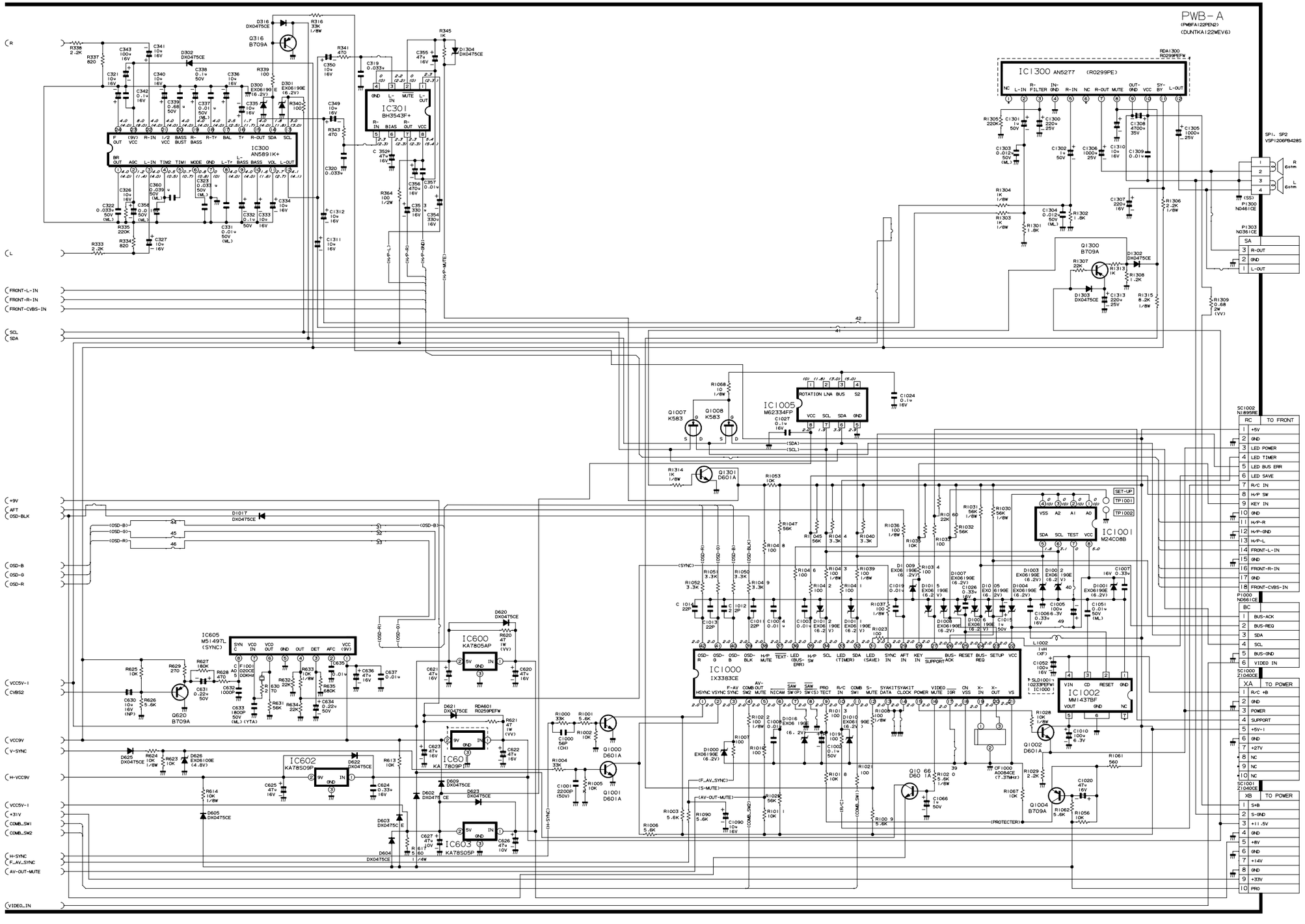


# MODEL SX68KF7 SCHEMATIC DIARGAM: MAIN-1 Unit




| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|

# MODEL SX68KF7 SCHEMATIC DIARGAM: MAIN-2 Unit




| RC | TO FRONT |
|---|---|
| 1 | +5V |
| 2 | GND |
| 3 | LED POWER |
| 4 | LED TIMER |
| 5 | LED BUS ERR |
| 6 | LED SAVE |
| 7 | R/C IN |
| 8 | H/P SW |
| 9 | KEY IN |
| 10 | GND |
| 11 | H/P-R |
| 12 | H/P-GND |
| 13 | H/P-L |
| 14 | FRONT-L-IN |
| 15 | GND |
| 16 | FRONT-R-IN |
| 17 | GND |
| 18 | FRONT-CVBS-IN |

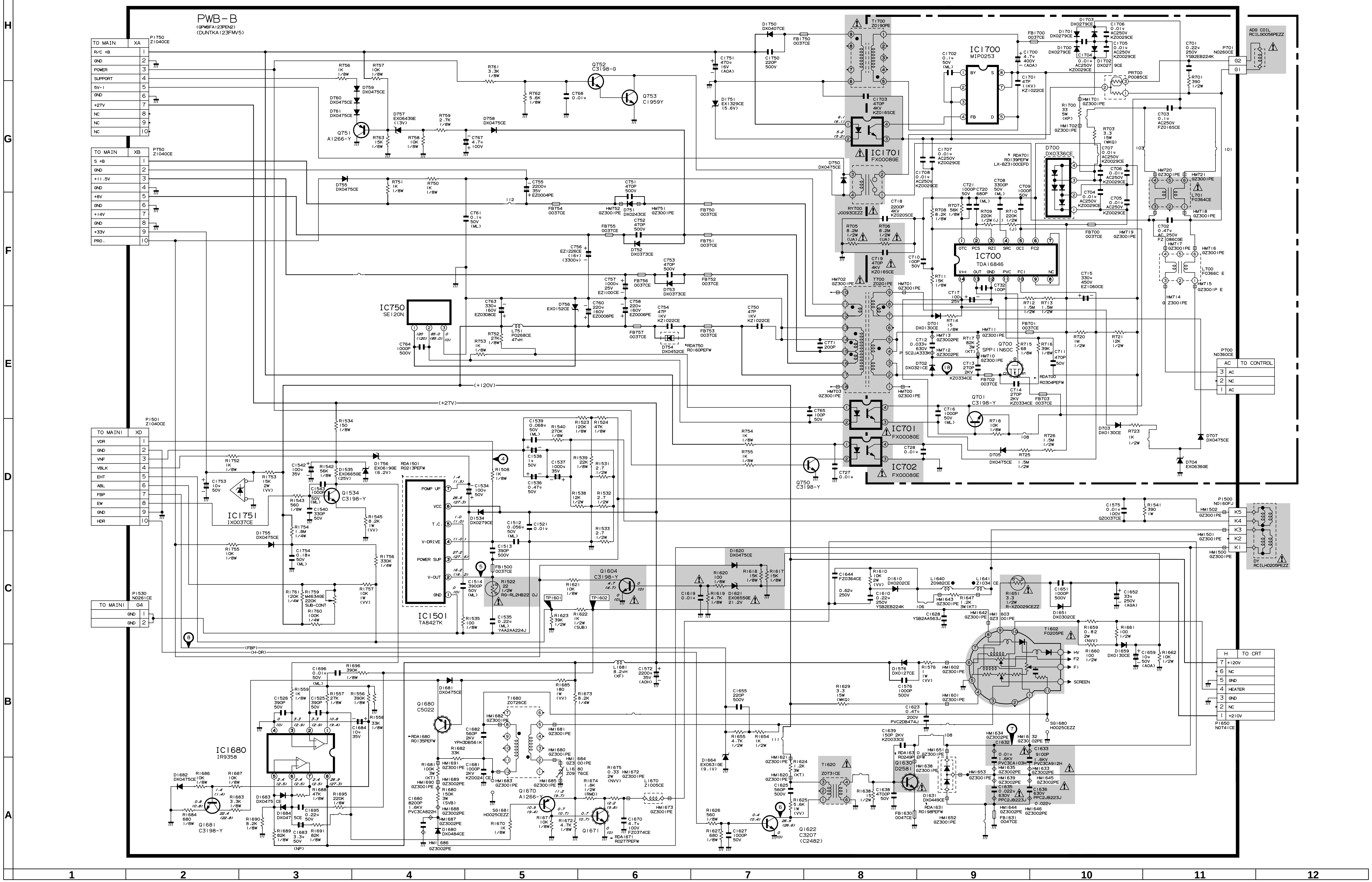
| BC | |
|---|---|
| 1 | BUS-ACK |
| 2 | BUS-REQ |
| 3 | SDA |
| 4 | SCL |
| 5 | BUS-GND |
| 6 | VIDEO IN |

| XA | TO POWER |
|---|---|
| 1 | R/C +B |
| 2 | GND |
| 3 | POWER |
| 4 | SUPPORT |
| 5 | +5V-1 |
| 6 | GND |
| 7 | +27V |
| 8 | NC |
| 9 | NC |
| 10 | NC |

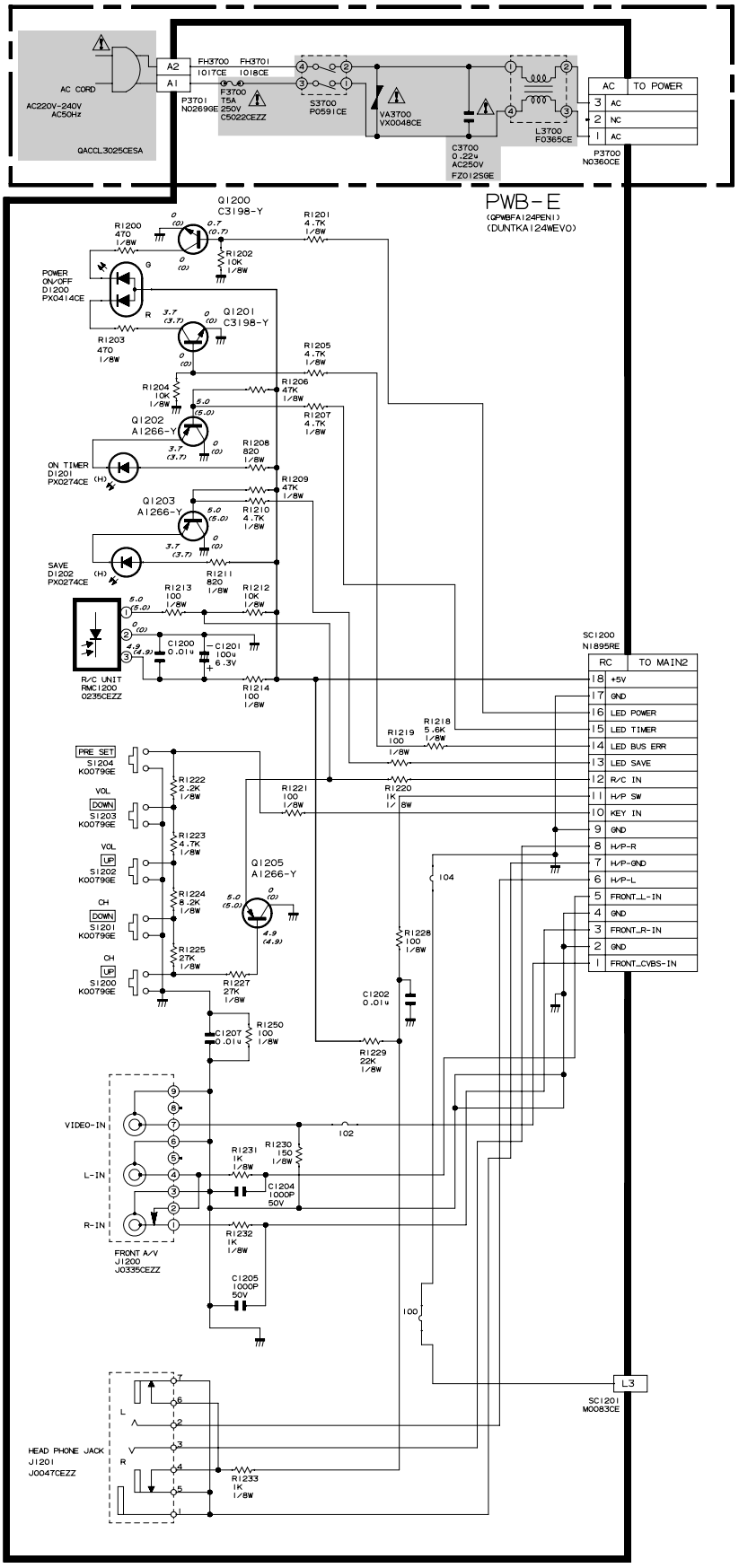
| XB | TO POWER |
|---|---|
| 1 | S+B |
| 2 | S-GND |
| 3 | +11.5V |
| 4 | GND |
| 5 | +8V |
| 6 | GND |
| 7 | +14V |
| 8 | GND |
| 9 | +33V |
| 10 | PRO |

| SA | |
|---|---|
| 3 | R-OUT |
| 2 | GND |
| 1 | L-OUT |

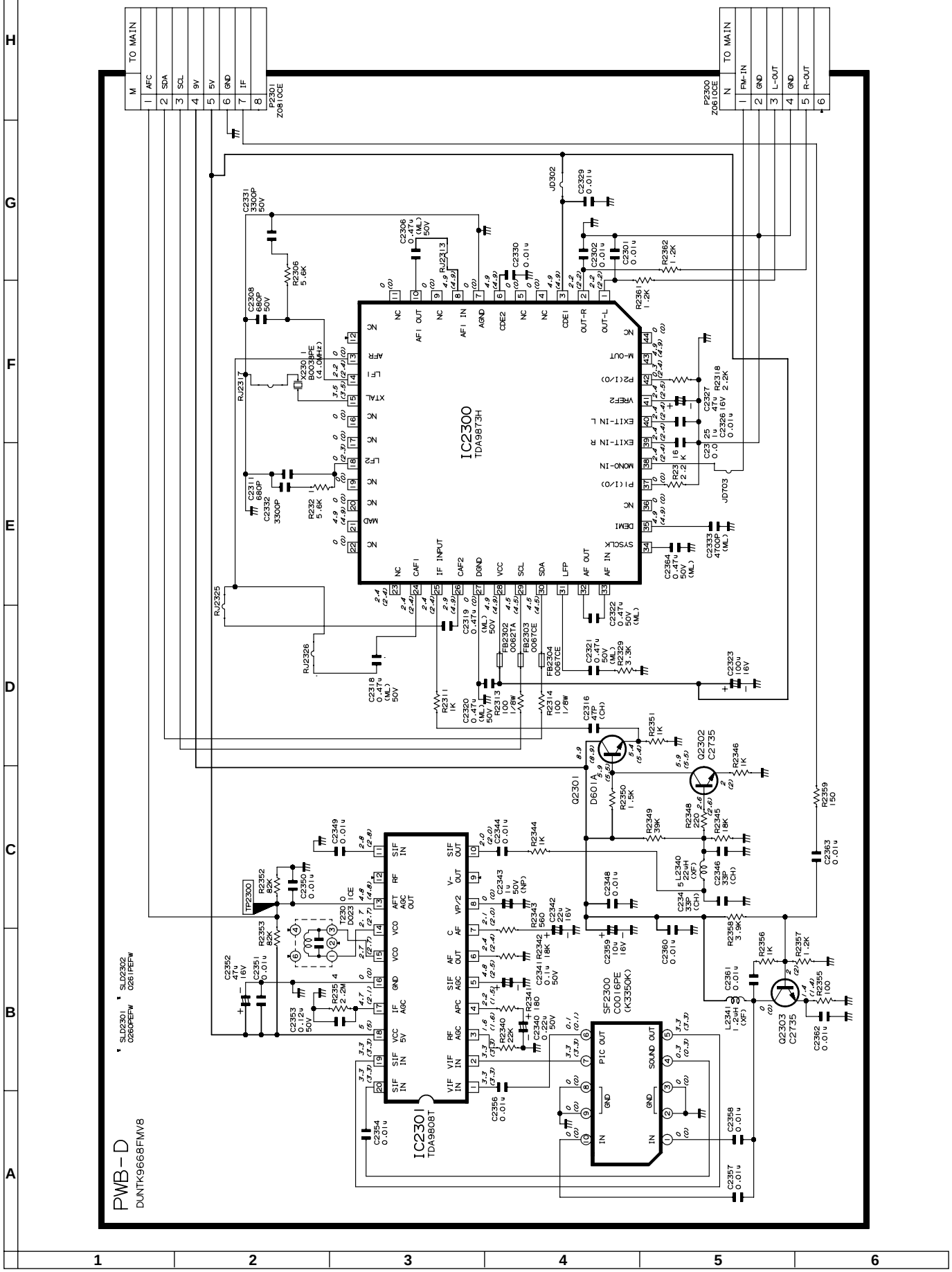
# SCHEMATIC DIARGAM: POWER Unit


PWB-B
(QPWBFA123PEN2)
(DUNTKA123FMV5)
TO MAIN XA
P1750 Z1040CE
R/C +B
GND
POWER
SUPPORT
5V-1
GND
+27V
NC
NC
NC
TO MAIN XB
P750 Z1040CE
S +B
GND
+11.5V
GND
+8V
GND
+14V
GND
+33V
PRO.
TO MAIN1 XD
P1501 Z1040CE
VDR
GND
VNF
VBLK
EHT
ABL
FBP
EW
GND
HDR
TO MAIN1 G4
P1530 N0261CE
GND
GND
IC750
SE120N
IC1751
IX0037CE
IC1501
TA8427K
POMP UP
VCC
T.C.
V-DRIVE
POWER SUP
V-OUT
GND
IC1680
IR9358
IC1700
MIP0253
IC1701
FX0008GE
IC701
FX0008GE
IC702
FX0008GE
IC700
TDA16846
OTC PCS RZI SRC OCI FC2
Vcc OUT GND PVC FCI NC
D700
DX0336CE
T1700
Z0190PE
T700
Z0201PE
T1680
Z0726CE
T1602
F0205PE
T1620
Z0731CE
Q700
SPP11N60C
Q701
C3198-Y
Q750
C3198-Y
Q751
A1266-Y
Q752
C3198-G
Q753
C1959Y
Q1534
C3198-Y
Q1604
C3198-Y
Q1622
C3207
(C2482)
Q1630
D2581
Q1670
A1266-Y
Q1671
Q1680
C5022
Q1681
C3198-Y
ADG COIL
RCILG0056PEZZ
P701
N0260CE
G2
G1
L701
F0364CE
L700
F0366C E
P700
N0360CE
AC TO CONTROL
3 AC
2 NC
1 AC
P1500
N0160FJ
K5
K4
K3
K2
K1
DY
RCILH0205PEZZ
H TO CRT
7 +120V
6 NC
5 GND
4 HEATER
3 GND
2 NC
1 +210V
P1650
N0741CE
HV
F2
F1
SCREEN
(+120V)
(+27V)
(FBP)
(H-DR)
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12

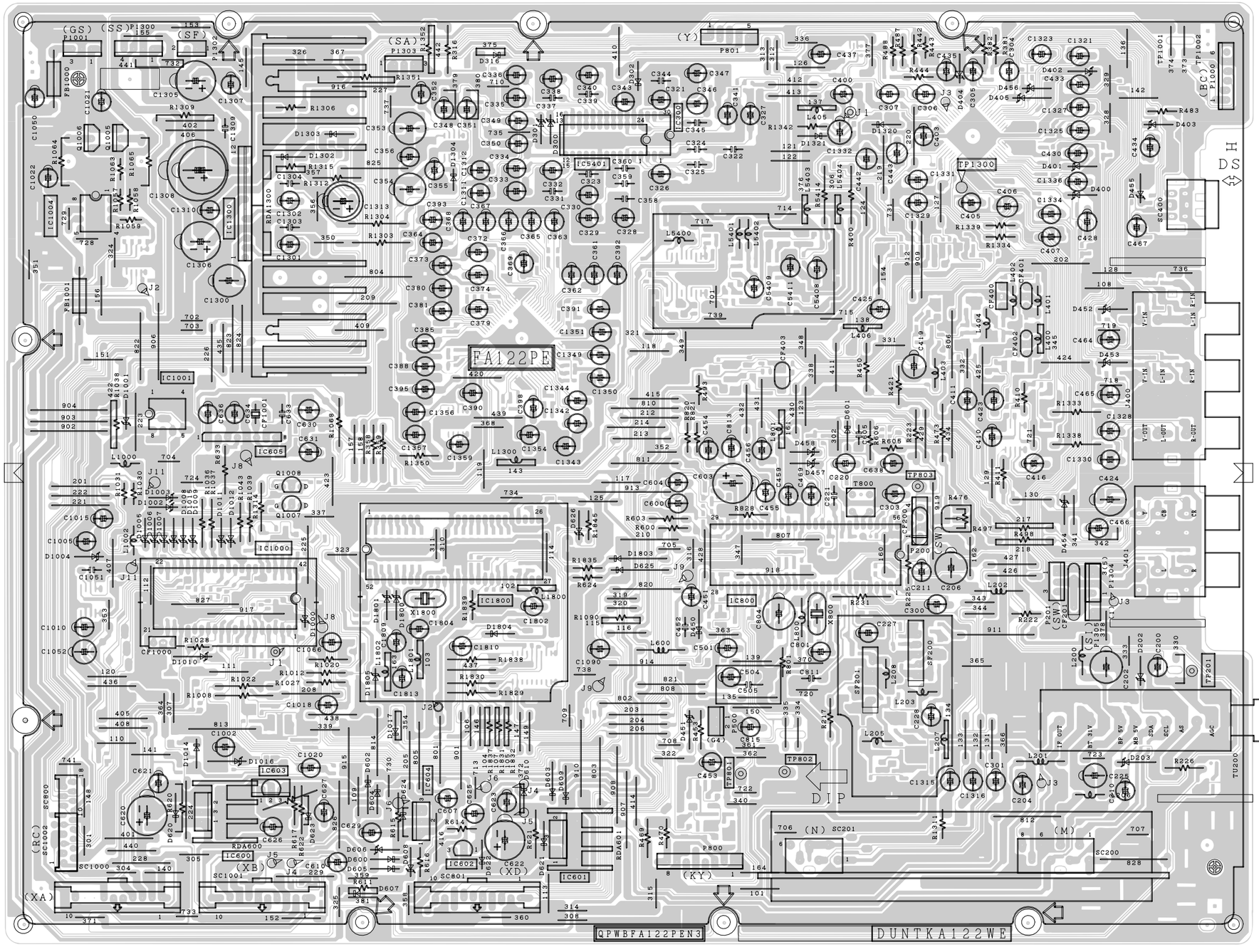
# SCHEMATIC DIARGAM: OPERATION Unit



# MODEL SX68KF7 SCHEMATIC DIARGAM: IGR Unit

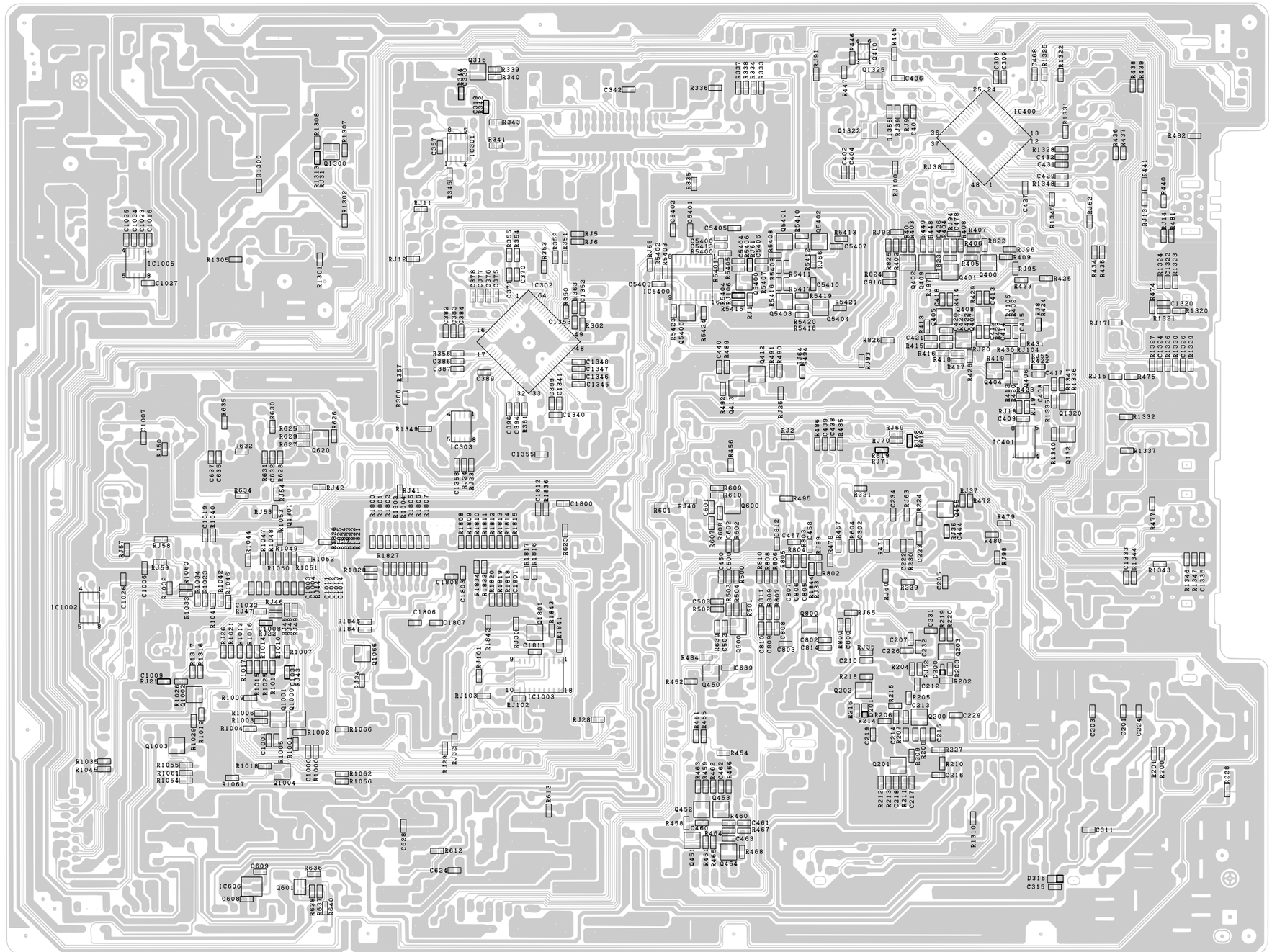


# PRINTED WIRING BOARD ASSEMBLIES

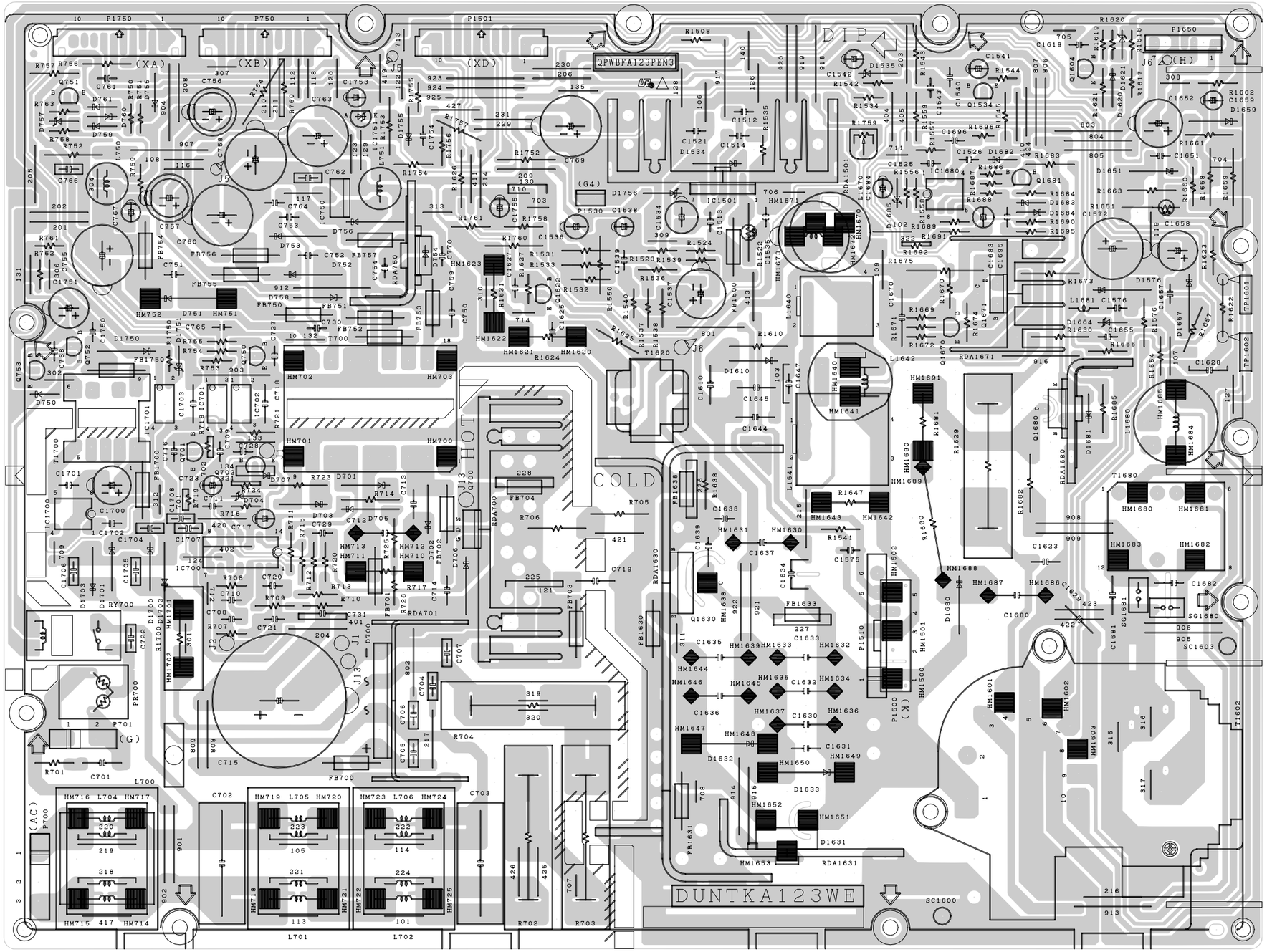



**PWB-A: MAIN Unit (Wiring Side)**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|



**PWB-A: MAIN Unit (Chip Parts Side)**


P1750
P750
P1501
P1650
(XA)
(XB)
(XD)
(H)
QPWBFA123PEN3
DIP
(G4)
(G)
(AC)
P700
P701
P1530
P1500
(K)
J1
J2
J5
J6
J13
HOT
COLD
DUNTKA123WE
SC1600
SC1603
SG1680
T1680
T1602
TP1601
TP1602
RDA1501
RDA1671
RDA1680
RDA1631
RDA1630
RDA701
RDA700
RY700
PR700
HM1500
HM1501
HM1502
HM1601
HM1602
HM1603
HM1680
HM1681
HM1682
HM1683
HM1684
HM1685
HM1687
HM1688
HM1689
HM1690
HM1691
HM1623
HM1622
HM1621
HM1620
HM1671
HM1670
HM1673
HM1672
HM1640
HM1641
HM1642
HM1643
HM1631
HM1630
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HM1652
HM1651
HM1653
HM1639
HM1633
HM1632
HM1635
HM1634
HM1637
HM1636
HM752
HM751
HM702
HM703
HM701
HM700
HM713
HM711
HM712
HM710
HM716
HM717
HM715
HM714
HM719
HM720
HM718
HM721
HM723
HM724
HM722
HM725
FB754
FB756
FB755
FB750
FB751
FB752
FB753
FB757
FB1750
FB700
FB704
FB703
FB1638
FB1639
FB1633
FB1630
FB1631
FB1500
FB701
FB702
FB1700
FB1702
FB1701
FB700
IC1701
IC1702
IC1700
IC1703
IC1704
IC1705
IC1706
IC1707
IC700
IC1753
IC1754
IC1751
IC1752
IC1501
IC1680
IC750
L1750
L1751
L1760
L1700
L1701
L1702
L1704
L1705
L1706
L1640
L1641
L1642
L1647
L1680
L1681
L1576
T1700
T700
T1620
R1508
R1620
R1619
R1618
R1617
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R1557
R1696
R1759
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R1686
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R1692
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R1623
R1658
R1659
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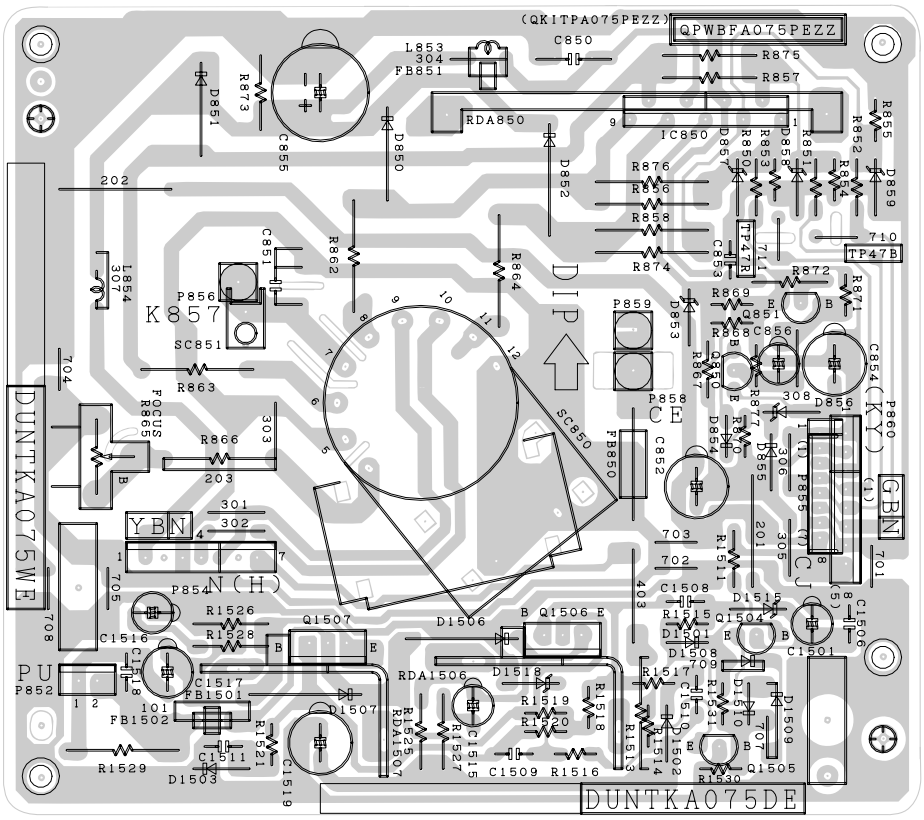
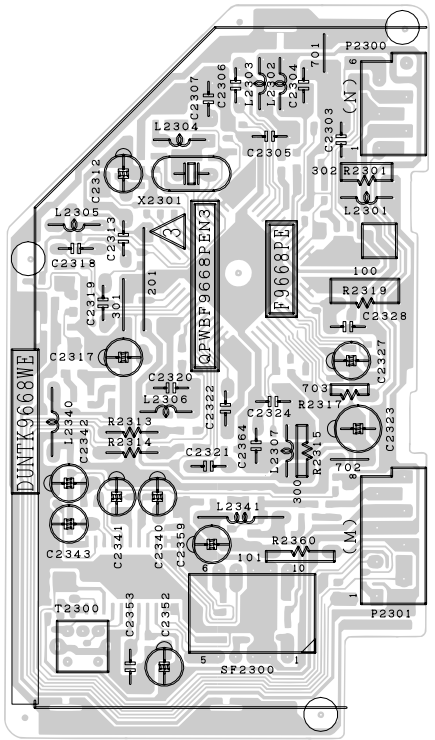
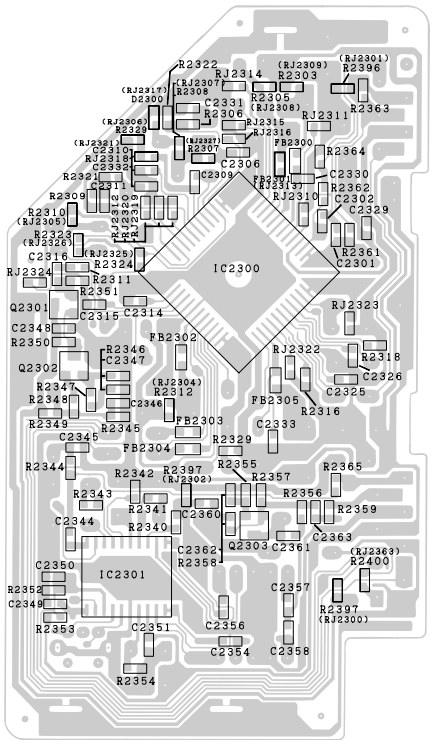
R1653
R1654
R1655
R1656
R1657




**PWB-C: CRT Unit (Wiring Side)**

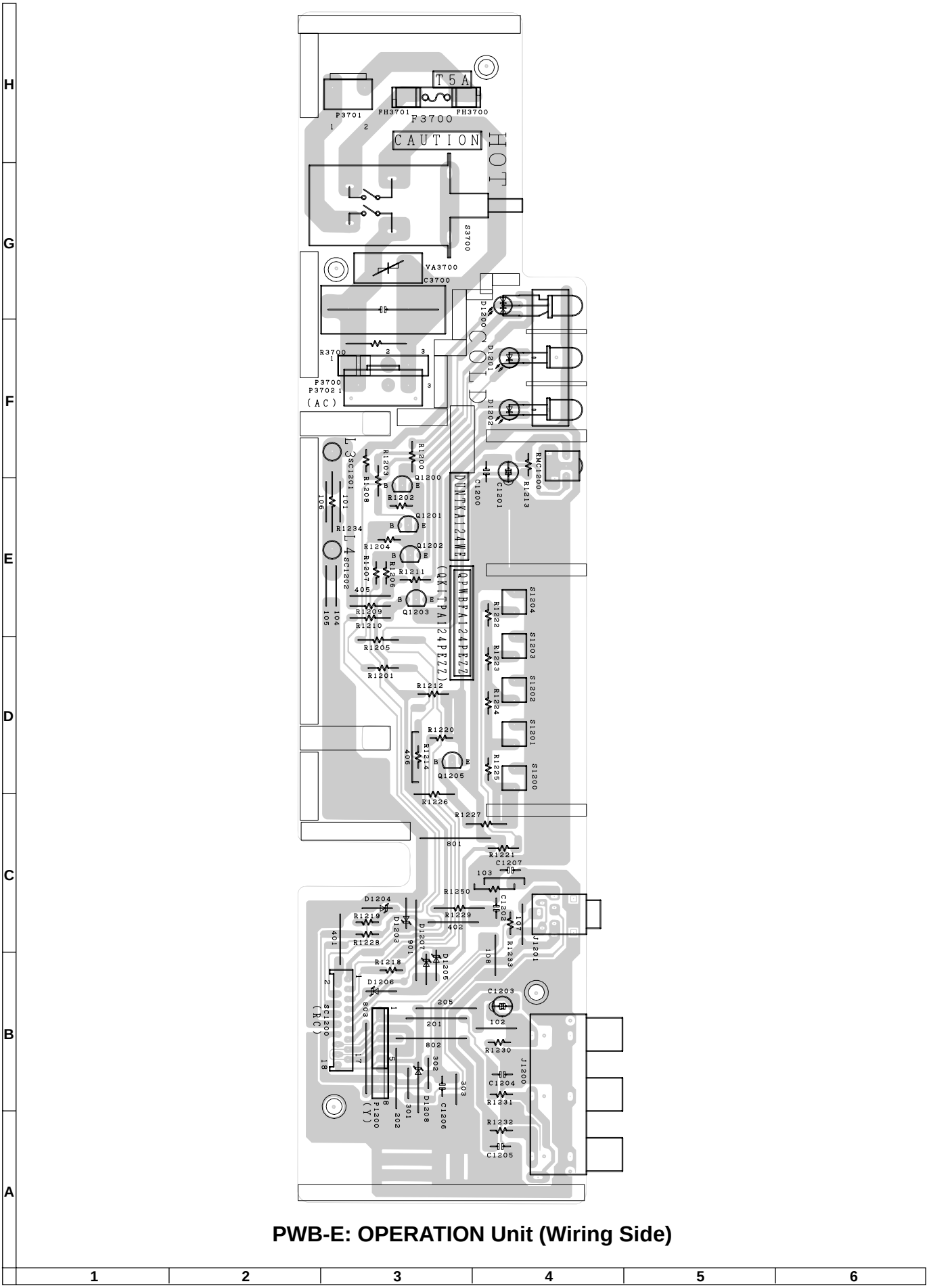



**(Wiring Side)**




**(Chip Parts Side)**

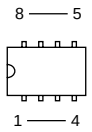
**PWB-D: IGR Unit**



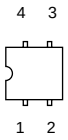

**PWB-E: OPERATION Unit (Wiring Side)**

# SOLID STATE DEVICE BASE DIAGRAM

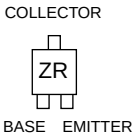
## TOP VIEW



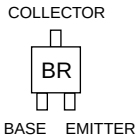

**M24C08W**



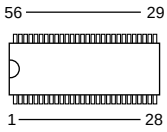

**FX0008GE**



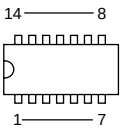

**D601A**



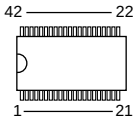

**B709A**



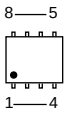

**iX3394CEN2**
**iX3395CEN2**



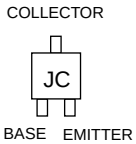

**TDA16846**



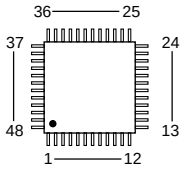

**iX2283CEN2**



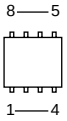

**M1437BF**
**M62334FP**
**BH3543F**
**iiR9358//-1**
**NJ2233BM**



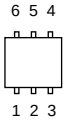

**2SC2735**



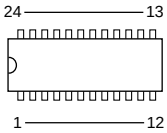

**CXA2089Q**



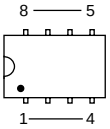

**iR9358**



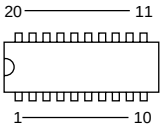

**VSiMZ1A**



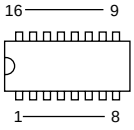

**AN5891K**




**MiP0253**

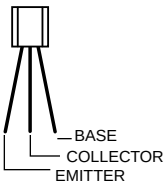



**TDA9808T**

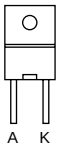



**TDA9181T-1**

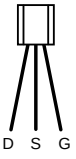
## SIDE VIEW




**2SC3198-Y**
**2SC3198-G**
**2SC1959-Y**




**DX0452CE**

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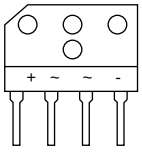


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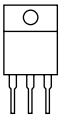

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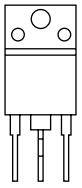

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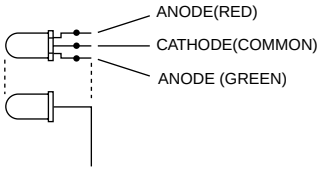


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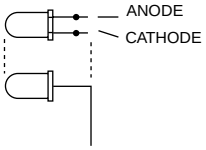


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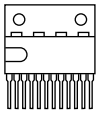

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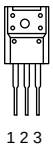


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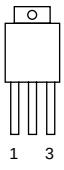
**KA7805**

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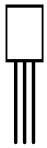

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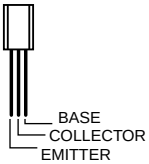


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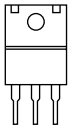

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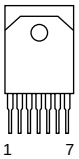


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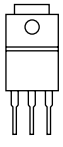

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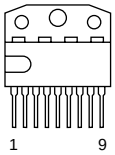
**VS2SA1964**

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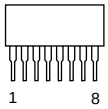
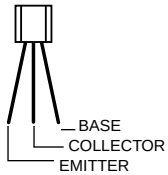



**M51497L**

**iX0037**




**KiA78S09P**

# PARTS LIST

## PARTS REPLACEMENT

Replacement parts which have these special safety characteristics identified in this manual: electrical components having such features are identified by "⚠" in the Replacement Parts Lists.
The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

## "HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

1. MODEL NUMBER
2. REF. NO.
3. PART NO.
4. DESCRIPTION
5. CODE
6. QUANTITY

MARK ★: SPARE PARTS-DELIVERY SECTION

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|

## PICTURE TUBER

| | | | | |
|---|---|---|---|---|
| ⚠ | VB68QCP892X3E | R | Picture Tube | CY |
| ⚠ DY | RCiLG0056PEZZ | R | ADG Coil | AS |
| ⚠ DY | RCiLH0205PEZZ | R | Deflection Yoke | |
| ⚠ | QEARC2913PEZZ | R | Grounding Strap | AK |
| | LHLDW0003PEKZ | R | Holder | AB |
| | LHLDW1075PEKZ | R | ADG Coil Holder, x4 | AC |
| | PMAGF3087CEZZ | R | Purity Magnet | AL |
| | PMAGG3002CEZZ | R | Magnet | AC |
| | PSPAG0003PEZZ | R | Spacer | AD |

## PRINTED WIRING BOARD ASSEMBLIES *(NOT REPLACEMENT ITEM)*

| | | | | |
|---|---|---|---|---|
| PWB-A | DUNTKA122FMW5 | – | MAIN Unit (CX68KF5) | — |
| PWB-A | DUNTKA122WEV6 | – | MAIN Unit (SX68KF7) | — |
| PWB-B | DUNTKA123FMV5 | – | POWER Unit | — |
| PWB-C | DUNTKA075FMW3 | – | CRT Unit | — |
| PWB-D | DUNTK9668FMV8 | – | IGR Unit (SX68KF7) | — |
| PWB-E | DUNTKA124WEV0 | – | OPERATION Unit | — |

## PWB-A DUNTKA122FMW5 (CX68KF5)
## PWB-A DUNTKA122WEV6 (SX68KF7)
## MAIN UNIT

### TUNER

***NOTE: THE PARTS HERE SHOWN ARE SUPPLIED AS AN ASSEMBLY BUT NOT INDEPENDENTLY.***

| | | | | |
|---|---|---|---|---|
| ⚠ TU200 | VTUVTST5HD87/ | R | Tuner | AZ |

### INTEGRATED CIRCUITS

| | | | | |
|---|---|---|---|---|
| IC300 | VHiAN5891K+-1 | R | AN5891K | AQ |
| IC301 | VHiBH3543F+-1 | R | BH3543F-E2 | AE |
| IC400 | VHiCXA2089Q-1 | R | CXA2089Q | AN |
| IC600 | VHiKA7805AP-1 | R | KA7805API | AE |
| IC601 | VHiKA7809AP-1 | R | KA7809API | AE |
| IC602 | VHiKA78S09P-1 | R | KA78S09P | AD |
| IC603 | VHiKA78S05P-1 | R | KA78S05P (SX68KF7) | AD |
| IC605 | VHiM51497L/-1 | R | M51497L | AL |
| IC800 | RH-iX3395CEN2 | R | I.C. | AY |
| IC1000 | RH-iX3383CEN2 | R | M37221MA-085SP | AX |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| IC1001 | VHiM24C08B/-1 | R | M24C08-BN6 | AM |
| IC1002 | VHiMM1437BF-1 | R | I.C. | AF |
| IC1005 | VHiM62334FP-1 | R | M62334FP (SX68KF7) | AH |
| IC1300 | VHiAN5277//-1 | R | AN5277 | AN |
| IC5400 | VHiTDA9181T-1 | R | TDA9181T | AU |

### TRANSISTORS

| | | | | |
|---|---|---|---|---|
| Q200 | VS2SC2735//1E | R | 2SC2735 | AC |
| Q201 | VS2SC2735//1E | R | 2SC2735 (CX68KF5) | AC |
| Q316 | VS2SB709A//-1 | R | 2SB709A | AA |
| Q400 | VS2SD601A//-1 | R | 2SD601A | AC |
| Q401 | VS2SD601A//-1 | R | 2SD601A | AC |
| Q402 | VS2SD601A//-1 | R | 2SD601A | AC |
| Q409 | VS2SD601A//-1 | R | 2SD601A | AC |
| Q410 | VSiMZ1A////-1 | R | IMZ1A | AC |
| Q450 | VS2SB709A//-1 | R | 2SB709A | AA |
| Q451 | VS2SD601A//-1 | R | 2SD601A | AC |
| Q452 | VS2SD601A//-1 | R | 2SD601A | AC |
| Q453 | VS2SD601A//-1 | R | 2SD601A | AC |
| Q454 | VS2SD601A//-1 | R | 2SD601A | AC |
| Q455 | VS2SD601A//-1 | R | 2SD601A | AC |
| Q600 | VS2SD601A//-1 | R | 2SD601A | AC |
| Q620 | VS2SB709A//-1 | R | 2SB709A | AA |
| Q800 | VS2SB709A//-1 | R | 2SB709A | AA |
| Q1000 | VS2SD601A//-1 | R | 2SD601A | AC |
| Q1001 | VS2SD601A//-1 | R | 2SD601A | AC |
| Q1002 | VS2SD601A//-1 | R | 2SD601A | AC |
| Q1004 | VS2SB709A//-1 | R | 2SB709A | AA |
| Q1007 | VS2SK583///-1 | R | (SX68KF7) | AE |
| Q1008 | VS2SK583///-1 | R | (SX68KF7) | AE |
| Q1066 | VS2SD601A//-1 | R | 2SD601A | AC |
| Q1300 | VS2SB709A//-1 | R | 2SB709A | AA |
| Q1301 | VS2SD601A//-1 | R | 2SD601A | AC |
| Q1320 | VS2SD601A//-1 | R | 2SD601A | AC |
| Q1321 | VS2SD601A//-1 | R | 2SD601A | AC |
| Q1322 | VS2SB709A//-1 | R | 2SB709A | AA |
| Q1325 | VS2SD601A//-1 | R | 2SD601A | AC |
| Q5400 | VS2SD601A//-1 | R | 2SD601A | AC |
| Q5401 | VS2SD601A//-1 | R | 2SD601A | AC |
| Q5402 | VS2SB709A//-1 | R | 2SB709A | AA |
| Q5403 | VS2SD601A//-1 | R | 2SD601A | AC |
| Q5404 | VS2SB709A//-1 | R | 2SB709A | AA |
| Q5406 | VS2SD601A//-1 | R | 2SD601A | AC |

### DIODES

| | | | | |
|---|---|---|---|---|
| D201 | VHD1SS390++-1 | R | Diode (CX68KF5) | AB |
| D202 | RH-EX0619GEZZ | R | Zener Diode | AA |
| D203 | RH-EX0619GEZZ | R | Zener Diode | AA |
| D300 | RH-EX0619GEZZ | R | Zener Diode | AA |
| D301 | RH-EX0619GEZZ | R | Zener Diode | AA |
| D302 | RH-DX0475CEZZ | R | Diode | AB |
| D315 | RH-EX1395CEZZ | R | Zener Diode (SX68KF7) | AC |
| D316 | RH-DX0475CEZZ | R | Diode | AB |
| D400 | RH-EX0631GEZZ | R | Zener Diode | AA |
| D401 | RH-EX0631GEZZ | R | Zener Diode | AA |
| D402 | RH-EX0631GEZZ | R | Zener Diode | AA |
| D403 | RH-EX0631GEZZ | R | Zener Diode | AA |
| D404 | RH-EX0631GEZZ | R | Zener Diode | AA |
| D405 | RH-EX0619GEZZ | R | Zener Diode | AA |
| D450 | RH-DX0475CEZZ | R | Diode | AB |
| D451 | RH-EX0621GEZZ | R | Zener Diode | AB |
| D455 | RH-EX0631GEZZ | R | Zener Diode | AA |
| D456 | RH-EX0631GEZZ | R | Zener Diode | AA |
| D457 | RH-EX0631GEZZ | R | Zener Diode | AA |
| D458 | RH-EX0631GEZZ | R | Zener Diode | AA |
| D602 | RH-DX0475CEZZ | R | Diode | AB |
| D603 | RH-DX0475CEZZ | R | Diode | AB |
| D604 | RH-DX0475CEZZ | R | Diode (SX68KF7) | AB |
| D605 | RH-DX0475CEZZ | R | Diode | AB |
| D609 | RH-DX0475CEZZ | R | Diode (SX68KF7) | AB |
| D620 | RH-DX0475CEZZ | R | Diode | AB |
| D621 | RH-DX0475CEZZ | R | Diode | AB |
| D622 | RH-DX0475CEZZ | R | Diode | AB |
| D623 | RH-DX0475CEZZ | R | Diode (SX68KF7) | AB |
| D625 | RH-DX0475CEZZ | R | Diode | AB |
| D626 | RH-EX0610GEZZ | R | Zener Diode | AA |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| **PWB-A** | **DUNTKA122FMW5 (CX68KF5)** | | | |
| **PWB-A** | **DUNTKA122WEV6 (SX68KF7)** | | | |
| | **MAIN UNIT (Continued)** | | | |
| D1000 | RH-EX0619GEZZ | R | Zener Diode | AA |
| D1001 | RH-EX0619GEZZ | R | Zener Diode | AA |
| D1002 | RH-EX0619GEZZ | R | Zener Diode | AA |
| D1003 | RH-EX0619GEZZ | R | Zener Diode | AA |
| D1004 | RH-EX0619GEZZ | R | Zener Diode | AA |
| D1005 | RH-EX0619GEZZ | R | Zener Diode | AA |
| D1006 | RH-EX0619GEZZ | R | Zener Diode | AA |
| D1007 | RH-EX0619GEZZ | R | Zener Diode | AA |
| D1008 | RH-EX0619GEZZ | R | Zener Diode | AA |
| D1009 | RH-EX0619GEZZ | R | Zener Diode | AA |
| D1010 | RH-EX0619GEZZ | R | Zener Diode | AA |
| D1011 | RH-EX0619GEZZ | R | Zener Diode | AA |
| D1012 | RH-EX0619GEZZ | R | Zener Diode | AA |
| D1015 | RH-EX0619GEZZ | R | Zener Diode | AA |
| D1016 | RH-EX0619GEZZ | R | Zener Diode | AA |
| D1017 | RH-DX0475CEZZ | R | Diode | AB |
| D1302 | RH-DX0475CEZZ | R | Diode | AB |
| D1303 | RH-DX0475CEZZ | R | Diode | AB |
| D1304 | RH-DX0475CEZZ | R | Diode | AB |
| D1320 | RH-DX0475CEZZ | R | Diode | AB |
| D1321 | RH-DX0475CEZZ | R | Diode | AB |
| | **PACKAGED CIRCUIT** | | | |
| X800 | RCRSB0278CEZZ | R | Crystal | AG |
| | **FILTERS AND COILS** | | | |
| CF200 | RFiLC0270CEZZ | R | Ceramic Filter (CX68KF5) | AD |
| CF401 | RFiLC0020CEZZ | R | Ceramic Filter | AE |
| CF1000 | RFiLA0084CEZZ | R | Ceramic Filter | AE |
| CF1001 | RFiLA0020CEZZ | R | Ceramic Filter | AD |
| L200 | VP-DF270K0000 | R | Peaking 27µH | AB |
| L201 | VP-DF270K0000 | R | Peaking 27µH | AB |
| L202 | VP-DF120K0000 | R | Peaking 12µH | AB |
| L203 | VP-XF1R2K0000 | R | Peaking 1.2µH | AB |
| L205 | VP-XF1R2K0000 | R | Peaking 1.2µH (CX68KF5) | AB |
| L401 | VP-XF120K0000 | R | Peaking 12µH | AB |
| L600 | VP-DF120K0000 | R | Peaking 12µH | AB |
| L800 | VP-DF120K0000 | R | Peaking 12µH | AB |
| L801 | VP-DF6R8K0000 | R | Peaking 6.8µH | AB |
| L1002 | VP-XF1R0K0000 | R | Peaking 1µH | AB |
| L5400 | VP-XF100K0000 | R | Peaking 10µH | AB |
| L5403 | VP-XF120K0000 | R | Peaking 12µH | AB |
| L5404 | VP-XF120K0000 | R | Peaking 12µH | AB |
| SF200 | RFiLC0444CEZZ | R | S.A.W Filter | AN |
| SF201 | RFiLC0445CEZZ | R | S.A.W Filter (CX68KF5) | AM |
| T800 | RCiLD0005PEZZ | R | Detection Coil | AF |
| | **CAPACITORS** | | | |
| C201 | VCKYCY1HF103Z | R | 0.01 50V Ceramic | AA |
| C202 | VCEA0A0JW228M | R | 2200 6.3V Electrolytic | AD |
| C203 | VCKYCY1HF103Z | R | 0.01 50V Ceramic | AA |
| C204 | VCEA0A1HW106M | R | 10 50V Electrolytic | AB |
| C205 | VCKYCY1HF103Z | R | 0.01 50V Ceramic | AA |
| C206 | VCEA0A0JW228M | R | 2200 6.3V Electrolytic | AD |
| C207 | VCKYCY1HF103Z | R | 0.01 50V Ceramic | AA |
| C210 | VCKYCY1HF103Z | R | 0.01 50V Ceramic (CX68KF5) | AA |
| C211 | VCEA0A1HW225M | R | 2.2 50V Electrolytic | AB |
| C212 | VCKYCY1HF103Z | R | 0.01 50V Ceramic | AA |
| C213 | VCKYCY1HF103Z | R | 0.01 50V Ceramic | AA |
| C214 | VCKYCY1HF103Z | R | 0.01 50V Ceramic | AA |
| C215 | VCKYCY1HF103Z | R | 0.01 50V Ceramic | AA |
| C216 | VCKYCY1HF103Z | R | 0.01 50V Ceramic (CX68KF5) | AA |
| C217 | VCKYCY1HF103Z | R | 0.01 50V Ceramic (CX68KF5) | AA |
| C218 | VCKYCY1HF103Z | R | 0.01 50V Ceramic (CX68KF5) | AA |
| C219 | VCKYCY1HF103Z | R | 0.01 50V Ceramic (CX68KF5) | AA |
| C220 | VCEA0A1HW224M | R | 0.22 50V Electrolytic | AB |
| C221 | VCQYTA1HM102K | R | 1000p 50V Mylar | AA |
| C222 | VCKYCY1CF104Z | R | 0.1 16V Ceramic | AA |
| C223 | VCKYCY1HF103Z | R | 0.01 50V Ceramic | AA |
| C226 | VCKYCY1HF103Z | R | 0.01 50V Ceramic | AA |
| C227 | VCEA0A1HW475M | R | 4.7 50V Electrolytic | AB |
| C231 | VCCCCY1HH3R0C | R | 3.0p 50V Ceramic | AA |
| C234 | VCKYCY1CF104Z | R | 0.1 16V Ceramic | AA |
| C300 | VCEA0A1CW106M | R | 10 16V Electrolytic | AB |
| C301 | VCEA0A1CW106M | R | 10 16V Electrolytic (SX68KF7) | AB |
| C302 | VCKYCY1EB183K | R | 0.018 25V Ceramic | AA |
| C303 | VCEA0A1HW475M | R | 4.7 50V Electrolytic | AB |
| C304 | VCEA0A1CW106M | R | 10 16V Electrolytic | AB |
| C305 | VCEA0A1CW106M | R | 10 16V Electrolytic | AB |
| C306 | VCEA0A1CW106M | R | 10 16V Electrolytic | AB |
| C307 | VCEA0A1CW106M | R | 10 16V Electrolytic | AB |
| C308 | VCKYPA1HB472K | R | 4700p 50V Ceramic | AA |
| C309 | VCKYPA1HB472K | R | 4700p 50V Ceramic | AA |
| C315 | VCKYCY1CF474Z | R | 0.47 16V Ceramic (SX68KF7) | AB |
| C319 | VCKYCY1CB333K | R | 0.033 16V Ceramic | AA |
| C320 | VCKYCY1CB333K | R | 0.033 16V Ceramic | AA |
| C321 | VCEA0A1CW106M | R | 10 16V Electrolytic | AB |
| C322 | VCQYTA1HM333K | R | 0.033 50V Mylar | AA |
| C323 | VCQYTA1HM333K | R | 0.033 50V Mylar | AA |
| C326 | VCEA0A1CW106M | R | 10 16V Electrolytic | AB |
| C327 | VCEA0A1CW106M | R | 10 16V Electrolytic | AB |
| C331 | VCQYTA1HM103K | R | 0.01 50V Mylar | AB |
| C332 | VCEA0A1HW104M | R | 0.1 50V Electrolytic | AB |
| C333 | VCEA0A1CW106M | R | 10 16V Electrolytic | AB |
| C334 | VCEA0A1CW106M | R | 10 16V Electrolytic | AB |
| C335 | VCEA0A1CW106M | R | 10 16V Electrolytic | AB |
| C336 | VCEA0A1CW106M | R | 10 16V Electrolytic | AB |
| C337 | VCQYTA1HM103K | R | 0.01 50V Mylar | AB |
| C338 | VCEA0A1HW104M | R | 0.1 50V Electrolytic | AB |
| C339 | VCFYFA1HA684J | R | 0.68 50V Mylar | AD |
| C340 | VCEA0A1CW106M | R | 10 16V Electrolytic | AB |
| C341 | VCEA0A1CW106M | R | 10 16V Electrolytic | AB |
| C342 | VCKYCY1CF104Z | R | 0.1 16V Ceramic | AA |
| C343 | VCEA0A1CW107M | R | 100 16V Electrolytic | AC |
| C349 | VCEA0A1CW106M | R | 10 16V Electrolytic | AB |
| C350 | VCEA0A1CW106M | R | 10 16V Electrolytic | AB |
| C352 | VCEA0A1CW476M | R | 47 16V Electrolytic | AB |
| C353 | VCEA0A1CW337M | R | 330 16V Electrolytic | AC |
| C354 | VCEA0A1CW337M | R | 330 16V Electrolytic | AC |
| C355 | VCEA0A1CW476M | R | 47 16V Electrolytic | AB |
| C356 | VCEA0A0JW477M | R | 470 6.3V Electrolytic | AC |
| C357 | VCKYCY1HF103Z | R | 0.01 50V Ceramic | AA |
| C358 | VCQYTA1HM153K | R | 0.015 50V Mylar | AA |
| C360 | VCQYTA1HM393K | R | 0.039 50V Mylar | AB |
| C400 | VCEA0A1CW107M | R | 100 16V Electrolytic | AC |
| C401 | VCKYCY1HF103Z | R | 0.01 50V Ceramic | AA |
| C402 | VCKYCY1CF474Z | R | 0.47 16V Ceramic | AB |
| C403 | VCEA0A1CW106M | R | 10 16V Electrolytic | AB |
| C404 | VCKYCY1CF104Z | R | 0.1 16V Ceramic | AA |
| C405 | VCEA0A1CW106M | R | 10 16V Electrolytic | AB |
| C406 | VCE9GA1CW106M | R | 10 16V Elect. (N.P) | AB |
| C407 | VCEA0A1CW106M | R | 10 16V Electrolytic | AB |
| C424 | VCEA0A1CW477M | R | 470 16V Electrolytic | AC |
| C425 | VCEA0A1CW476M | R | 47 16V Electrolytic | AB |
| C426 | VCKYCY1HF103Z | R | 0.01 50V Ceramic | AA |
| C427 | VCKYCY1CF104Z | R | 0.1 16V Ceramic | AA |
| C428 | VCEA0A1CW106M | R | 10 16V Electrolytic | AB |
| C429 | VCKYCY1CF104Z | R | 0.1 16V Ceramic | AA |
| C430 | VCEA0A1CW106M | R | 10 16V Electrolytic | AB |
| C431 | VCKYCY1CF104Z | R | 0.1 16V Ceramic | AA |
| C432 | VCKYCY1CF104Z | R | 0.1 16V Ceramic | AA |
| C433 | VCEA0A1CW106M | R | 10 16V Electrolytic | AB |
| C434 | VCEA0A1CW106M | R | 10 16V Electrolytic | AB |
| C435 | VCEA0A1CW106M | R | 10 16V Electrolytic | AB |
| C436 | VCKYCY1HF103Z | R | 0.01 50V Ceramic | AA |
| C437 | VCEA0A1CW476M | R | 47 16V Electrolytic | AB |
| C438 | VCKYCY1CF104Z | R | 0.1 16V Ceramic | AA |
| C439 | VCKYCY1CF104Z | R | 0.1 16V Ceramic | AA |
| C450 | VCKYCY1HB103K | R | 0.01 50V Ceramic | AA |

| Ref. No. | Part No. | ★ | | | Description | Code |
|---|---|---|---|---|---|---|
| **PWB-A** | **DUNTKA122FMW5 (CX68KF5)** | | | | | |
| **PWB-A** | **DUNTKA122WEV6 (SX68KF7)** | | | | | |
| | **MAIN UNIT (Continued)** | | | | | |
| C451 | VCEA0A1HW474M | R | 0.47 | 50V | Electrolytic | AB |
| C452 | VCFYFA1HA334J | R | 0.33 | 50V | Mylar | AB |
| C453 | VCEA0A1CW226M | R | 22 | 16V | Electrolytic | AB |
| C454 | VCEA0A1CW106M | R | 10 | 16V | Electrolytic | AB |
| C455 | VCEA0A1HW105M | R | 1.0 | 50V | Electrolytic | AB |
| C456 | VCEA0A1HW224M | R | 0.22 | 50V | Electrolytic | AB |
| C457 | VCKYCY1CF104Z | R | 0.1 | 16V | Ceramic | AA |
| C458 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C459 | VCEA0A1CW107M | R | 100 | 16V | Electrolytic | AC |
| C460 | VCKYCY1HB822K | R | 8200p | 50V | Ceramic | AB |
| C461 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C462 | VCCCCY1HH561J | R | 560p | 50V | Ceramic | AB |
| C463 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C468 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C469 | VCEA0A1HW105M | R | 1.0 | 50V | Electrolytic | AB |
| C478 | VCKYCY1HB152K | R | 1500p | 50V | Ceramic | AA |
| C500 | VCKYCY1HB222K | R | 2200p | 50V | Ceramic | AA |
| C501 | VCEACA1HC224M | R | 0.22 | 50V | Electrolytic | AC |
| C505 | VCFPVC2DB474J | R | 0.47 | 200V | Polypro Film | AE |
| C600 | VCEA0A1HW474M | R | 0.47 | 50V | Electrolytic | AB |
| C601 | VCKYCY1HB822K | R | 8200p | 50V | Ceramic | AB |
| C602 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C603 | VCEA0A1CW228M | R | 2200 | 16V | Electrolytic | AD |
| C605 | VCQYTA1HM152J | R | 1500p | 50V | Mylar | AA |
| C620 | VCEA0A1CW476M | R | 47 | 16V | Electrolytic | AB |
| C621 | VCEA0A1CW476M | R | 47 | 16V | Electrolytic | AB |
| C622 | VCEA0A1CW476M | R | 47 | 16V | Electrolytic | AB |
| C623 | VCEA0A1CW476M | R | 47 | 16V | Electrolytic | AB |
| C624 | VCKYCY1CF334Z | R | 0.33 | 16V | Ceramic | AA |
| C625 | VCEA0A1CW476M | R | 47 | 16V | Electrolytic | AB |
| C626 | VCEA0A1AW476M | R | 47 (SX68KF7) | 10V | Electrolytic | AB |
| C627 | VCEA0A1AW476M | R | 47 (SX68KF7) | 10V | Electrolytic | AB |
| C630 | VCE9GA1CW106M | R | 10 | 16V | Elect. (N.P) | AB |
| C631 | VCEA0A1HW224M | R | 0.22 | 50V | Electrolytic | AB |
| C632 | VCKYCY1HB102K | R | 1000p | 50V | Ceramic | AA |
| C633 | VCQYTA1HM182K | R | 1800p | 50V | Mylar | AA |
| C634 | VCEA0A1HW224M | R | 0.22 | 50V | Electrolytic | AB |
| C635 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C636 | VCEA0A1CW476M | R | 47 | 16V | Electrolytic | AB |
| C637 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C638 | VCQYTA1HM473J | R | 0.047 | 50V | Mylar | AA |
| C639 | VCKYCY1HB392K | R | 3900p | 50V | Ceramic | AA |
| C800 | VCKYCY1HB222K | R | 2200p | 50V | Ceramic | AA |
| C801 | VCEA0A1HW224M | R | 0.22 | 50V | Electrolytic | AB |
| C802 | VCCCCY1HH100D | R | 10p | 50V | Ceramic | AA |
| C803 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C804 | VCEA0A1CW107M | R | 100 | 16V | Electrolytic | AC |
| C805 | VCKYCY1CF104Z | R | 0.1 | 16V | Ceramic | AA |
| C806 | VCKYCY1CF104Z | R | 0.1 | 16V | Ceramic | AA |
| C807 | VCKYCY1CF104Z | R | 0.1 | 16V | Ceramic | AA |
| C808 | VCCCCY1HH470J | R | 47p | 50V | Ceramic | AA |
| C809 | VCCCCY1HH470J | R | 47p | 50V | Ceramic | AA |
| C810 | VCCCCY1HH470J | R | 47p | 50V | Ceramic | AA |
| C812 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C813 | VCEA0A1CW107M | R | 100 | 16V | Electrolytic | AC |
| C815 | VCEA0A1CW106M | R | 10 | 16V | Electrolytic | AB |
| C1000 | VCCCCY1HH560J | R | 56p | 50V | Ceramic | AA |
| C1001 | VCKYCY1HB222K | R | 2200p | 50V | Ceramic | AA |
| C1002 | VCEA0A1HW104M | R | 0.1 | 50V | Electrolytic | AB |
| C1003 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C1004 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C1005 | VCEA0A0JW107M | R | 100 | 6.3V | Electrolytic | AB |
| C1006 | VCKYCY1CF334Z | R | 0.33 | 16V | Ceramic | AA |
| C1007 | VCKYCY1CF334Z | R | 0.33 | 16V | Ceramic | AA |
| C1008 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C1009 | VCKYCY1HF103Z | R | 0.01 (CX68KF5) | 50V | Ceramic | AA |
| C1010 | VCEA0A0JW107M | R | 100 | 6.3V | Electrolytic | AB |
| C1011 | VCCCCY1HH220J | R | 22p | 50V | Ceramic | AA |
| C1012 | VCCCCY1HH220J | R | 22p | 50V | Ceramic | AA |
| C1013 | VCCCCY1HH220J | R | 22p | 50V | Ceramic | AA |
| C1014 | VCCCCY1HH220J | R | 22p | 50V | Ceramic | AA |
| C1015 | VCEA0A1HW105M | R | 1.0 | 50V | Electrolytic | AB |
| C1019 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C1020 | VCEA0A1CW476M | R | 47 | 16V | Electrolytic | AB |
| C1024 | VCKYCY1CF104Z | R | 0.1 (SX68KF7) | 16V | Ceramic | AA |
| C1026 | VCKYCY1CF334Z | R | 0.33 | 16V | Ceramic | AA |
| C1027 | VCKYCY1CF104Z | R | 0.1 (SX68KF7) | 16V | Ceramic | AA |
| C1051 | VCQYTA1HM103K | R | 0.01 | 50V | Mylar | AB |
| C1052 | VCEA0A1CW107M | R | 100 | 16V | Electrolytic | AC |
| C1066 | VCEA0A1HW105M | R | 1.0 | 50V | Electrolytic | AB |
| C1090 | VCEA0A1CW106M | R | 10 | 16V | Electrolytic | AB |
| C1300 | VCEA0A1EW227M | R | 220 | 25V | Electrolytic | AB |
| C1301 | VCEA0A1HW105M | R | 1.0 | 50V | Electrolytic | AB |
| C1302 | VCEA0A1HW105M | R | 1.0 | 50V | Electrolytic | AB |
| C1303 | VCQYTA1HM123J | R | 0.012 | 50V | Mylar | AA |
| C1304 | VCQYTA1HM123J | R | 0.012 | 50V | Mylar | AA |
| C1305 | VCEA0A1EW108M | R | 1000 | 25V | Electrolytic | AD |
| C1306 | VCEA0A1EW108M | R | 1000 | 25V | Electrolytic | AD |
| C1307 | VCEA0A1CW227M | R | 220 | 16V | Electrolytic | AC |
| C1308 | VCEA0H1VW478M | R | 4700 | 35V | Electrolytic | AL |
| C1309 | VCKYPA1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C1310 | VCEA0A1CW106M | R | 10 | 16V | Electrolytic | AB |
| C1311 | VCEA0A1CW106M | R | 10 | 16V | Electrolytic | AB |
| C1312 | VCEA0A1CW106M | R | 10 | 16V | Electrolytic | AB |
| C1313 | VCEA0A1EW227M | R | 220 | 25V | Electrolytic | AB |
| C1315 | VCEA0A1CW106M | R | 10 (SX68KF7) | 16V | Electrolytic | AB |
| C1316 | VCEA0A1CW106M | R | 10 (SX68KF7) | 16V | Electrolytic | AB |
| C1320 | VCKYCY1HB102K | R | 1000p | 50V | Ceramic | AA |
| C1321 | VCEA0A1CW106M | R | 10 | 16V | Electrolytic | AB |
| C1322 | VCKYCY1HB102K | R | 1000p | 50V | Ceramic | AA |
| C1323 | VCEA0A1CW106M | R | 10 | 16V | Electrolytic | AB |
| C1324 | VCKYCY1HB102K | R | 1000p | 50V | Ceramic | AA |
| C1325 | VCEA0A1CW106M | R | 10 | 16V | Electrolytic | AB |
| C1326 | VCKYCY1HB102K | R | 1000p | 50V | Ceramic | AA |
| C1327 | VCEA0A1CW106M | R | 10 | 16V | Electrolytic | AB |
| C1328 | VCEA0A1CW106M | R | 10 | 16V | Electrolytic | AB |
| C1329 | VCEA0A1CW106M | R | 10 | 16V | Electrolytic | AB |
| C1330 | VCEA0A1CW106M | R | 10 | 16V | Electrolytic | AB |
| C1331 | VCEA0A1CW106M | R | 10 | 16V | Electrolytic | AB |
| C1332 | VCEA0A1AW227M | R | 220 | 10V | Electrolytic | AB |
| C1333 | VCKYCY1HB102K | R | 1000p | 50V | Ceramic | AA |
| C1334 | VCEA0A1CW106M | R | 10 | 16V | Electrolytic | AB |
| C1335 | VCKYCY1HB102K | R | 1000p | 50V | Ceramic | AA |
| C1336 | VCEA0A1CW106M | R | 10 | 16V | Electrolytic | AB |
| C5400 | VCKYCY1CF104Z | R | 0.1 | 16V | Ceramic | AA |
| C5401 | VCKYCY1CF104Z | R | 0.1 | 16V | Ceramic | AA |
| C5402 | VCKYCY1CF104Z | R | 0.1 | 16V | Ceramic | AA |
| C5403 | VCKYCY1CF104Z | R | 0.1 | 16V | Ceramic | AA |
| C5407 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C5408 | VCEA0A1CW107M | R | 100 | 16V | Electrolytic | AC |
| C5409 | VCEA0A1CW106M | R | 10 | 16V | Electrolytic | AB |
| C5410 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C5411 | VCEA0A1CW107M | R | 100 | 16V | Electrolytic | AC |
| C5413 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |

## RESISTORS

| | | | | | | |
|---|---|---|---|---|---|---|
| RJ5 | VRS-CY1JF000J | R | 0 | 1/16W | Metal Oxide | AA |
| RJ6 | VRS-CY1JF000J | R | 0 | 1/16W | Metal Oxide | AA |
| RJ8 | VRS-CY1JF000J | R | 0 | 1/16W | Metal Oxide | AA |
| RJ11 | VRS-CY1JF000J | R | 0 | 1/16W | Metal Oxide | AA |
| RJ12 | VRS-CY1JF000J | R | 0 | 1/16W | Metal Oxide | AA |
| RJ13 | VRS-CY1JF000J | R | 0 | 1/16W | Metal Oxide | AA |
| RJ14 | VRS-CY1JF000J | R | 0 | 1/16W | Metal Oxide | AA |
| RJ15 | VRS-CY1JF000J | R | 0 | 1/16W | Metal Oxide | AA |
| RJ17 | VRS-CY1JF000J | R | 0 | 1/16W | Metal Oxide | AA |
| RJ18 | VRS-CY1JF000J | R | 0 | 1/16W | Metal Oxide | AA |
| RJ19 | VRS-CY1JF000J | R | 0 | 1/16W | Metal Oxide | AA |
| RJ21 | VRS-CY1JF000J | R | 0 (SX68KF7) | 1/16W | Metal Oxide | AA |
| RJ25 | VRS-CY1JF000J | R | 0 | 1/16W | Metal Oxide | AA |
| RJ26 | VRS-CY1JF000J | R | 0 | 1/16W | Metal Oxide | AA |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| **PWB-A** | **DUNTKA122FMW5 (CX68KF5)** | | | |
| **PWB-A** | **DUNTKA122WEV6 (SX68KF7)** | | | |
| **MAIN UNIT (Continued)** | | | | |
| RJ28 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ29 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ30 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ32 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ33 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ34 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ35 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide (SX68KF7) | AA |
| RJ36 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ37 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ38 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ39 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ41 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ42 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ45 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ46 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ48 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ49 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ50 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ52 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ53 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide (CX68KF5) | AA |
| RJ54 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide (CX68KF5) | AA |
| RJ55 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ56 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ57 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ58 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ59 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ60 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ61 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ62 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ63 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ64 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ65 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ91 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ92 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ93 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ94 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ95 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ96 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ97 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ98 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ99 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ100 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ101 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ102 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| RJ103 | VRS-CY1JF000J | R | 0 1/16W Metal Oxide | AA |
| R200 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R201 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R205 | VRS-CY1JF122J | R | 1.2k 1/16W Metal Oxide | AA |
| R206 | VRS-CY1JF392J | R | 3.9k 1/16W Metal Oxide | AA |
| R207 | VRS-CY1JF122J | R | 1.2k 1/16W Metal Oxide | AA |
| R208 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R209 | VRS-CY1JF392J | R | 3.9k 1/16W Metal Oxide (CX68KF5) | AA |
| R210 | VRS-CY1JF680J | R | 68 1/16W Metal Oxide (CX68KF5) | AA |
| R211 | VRS-CY1JF122J | R | 1.2k 1/16W Metal Oxide (CX68KF5) | AA |
| R212 | VRS-CY1JF122J | R | 1.2k 1/16W Metal Oxide (CX68KF5) | AA |
| R213 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide (CX68KF5) | AA |
| R214 | VRS-CY1JF682J | R | 6.8k 1/16W Metal Oxide (CX68KF5) | AA |
| R215 | VRS-CY1JF222J | R | 2.2k 1/16W Metal Oxide (CX68KF5) | AA |
| R216 | VRS-CY1JF222J | R | 2.2k 1/16W Metal Oxide (CX68KF5) | AA |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| R221 | VRS-CY1JF221J | R | 220 1/16W Metal Oxide | AA |
| R222 | VRD-RA2BE333J | R | 33k 1/8W Carbon | AA |
| R223 | VRD-RA2BE101J | R | 100 1/8W Carbon | AB |
| R224 | VRS-CY1JF102J | R | 1.0k 1/16W Metal Oxide | AA |
| R225 | VRD-RA2BE102J | R | 1.0k 1/8W Carbon (CX68KF5) | AA |
| R227 | VRS-CY1JF680J | R | 68 1/16W Metal Oxide | AA |
| R316 | VRD-RA2BE333J | R | 33k 1/8W Carbon | AA |
| R333 | VRS-CY1JF222J | R | 2.2k 1/16W Metal Oxide | AA |
| R334 | VRS-CY1JF821J | R | 820 1/16W Metal Oxide | AA |
| R335 | VRS-CY1JF224J | R | 220k 1/16W Metal Oxide | AA |
| R337 | VRS-CY1JF821J | R | 820 1/16W Metal Oxide | AA |
| R338 | VRS-CY1JF222J | R | 2.2k 1/16W Metal Oxide | AA |
| R339 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R340 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R341 | VRS-CY1JF471J | R | 470 1/16W Metal Oxide | AA |
| R343 | VRS-CY1JF471J | R | 470 1/16W Metal Oxide | AA |
| R345 | VRS-CY1JF102J | R | 1.0k 1/16W Metal Oxide | AA |
| R364 | VRD-RM2HD101J | R | 100 1/2W Carbon | AA |
| R381 | VRD-RA2BE101J | R | 100 1/8W Carbon | AB |
| R382 | VRD-RA2BE101J | R | 100 1/8W Carbon | AB |
| R400 | VRD-RA2BE101J | R | 100 1/8W Carbon | AB |
| R401 | VRS-CY1JF221J | R | 220 1/16W Metal Oxide | AA |
| R402 | VRS-CY1JF221J | R | 220 1/16W Metal Oxide | AA |
| R403 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R404 | VRS-CY1JF221J | R | 220 1/16W Metal Oxide | AA |
| R405 | VRS-CY1JF221J | R | 220 1/16W Metal Oxide | AA |
| R406 | VRS-CY1JF221J | R | 220 1/16W Metal Oxide | AA |
| R407 | VRS-CY1JF221J | R | 220 1/16W Metal Oxide | AA |
| R408 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R409 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R410 | VRD-RA2BE100J | R | 10 1/8W Carbon | AA |
| R423 | VRS-CY1JF271J | R | 270 1/16W Metal Oxide | AA |
| R425 | VRS-CY1JF331J | R | 330 1/16W Metal Oxide | AA |
| R434 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R435 | VRS-CY1JF151J | R | 150 1/16W Metal Oxide | AA |
| R436 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R437 | VRS-CY1JF151J | R | 150 1/16W Metal Oxide | AA |
| R438 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R439 | VRS-CY1JF151J | R | 150 1/16W Metal Oxide | AA |
| R440 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R441 | VRS-CY1JF151J | R | 150 1/16W Metal Oxide | AA |
| R442 | VRD-RA2BE101J | R | 100 1/8W Carbon | AB |
| R443 | VRD-RA2BE151J | R | 150 1/8W Carbon | AA |
| R444 | VRD-RA2BE102J | R | 1.0k 1/8W Carbon | AA |
| R445 | VRS-CY1JF123J | R | 12k 1/16W Metal Oxide | AA |
| R446 | VRS-CY1JF123J | R | 12k 1/16W Metal Oxide | AA |
| R447 | VRS-CY1JF223J | R | 22k 1/16W Metal Oxide | AA |
| R448 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R449 | VRS-CY1JF471J | R | 470 1/16W Metal Oxide | AA |
| R450 | VRD-RA2BE750J | R | 75 1/8W Carbon | AA |
| R451 | VRS-CY1JF562J | R | 5.6k 1/16W Metal Oxide | AA |
| R452 | VRS-CY1JF223J | R | 22k 1/16W Metal Oxide | AA |
| R453 | VRD-RM2HD680J | R | 68 1/2W Carbon | AA |
| R454 | VRS-CY1JF102J | R | 1.0k 1/16W Metal Oxide | AA |
| R455 | VRS-CY1JF103J | R | 10k 1/16W Metal Oxide | AA |
| R456 | VRS-CY1JF224J | R | 220k 1/16W Metal Oxide | AA |
| R457 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R458 | VRS-CY1JF102J | R | 1.0k 1/16W Metal Oxide | AA |
| R459 | VRS-CY1JF223J | R | 22k 1/16W Metal Oxide | AA |
| R460 | VRS-CY1JF821J | R | 820 1/16W Metal Oxide | AA |
| R461 | VRS-CY1JF102J | R | 1.0k 1/16W Metal Oxide | AA |
| R462 | VRS-CY1JF471J | R | 470 1/16W Metal Oxide | AA |
| R463 | VRS-CY1JF471J | R | 470 1/16W Metal Oxide | AA |
| R464 | VRS-CY1JF393J | R | 39k 1/16W Metal Oxide | AA |
| R465 | VRS-CY1JF182J | R | 1.8k 1/16W Metal Oxide | AA |
| R466 | VRS-CY1JF820J | R | 82 1/16W Metal Oxide | AA |
| R467 | VRS-CY1JF393J | R | 39k 1/16W Metal Oxide | AA |
| R468 | VRS-CY1JF273J | R | 27k 1/16W Metal Oxide | AA |
| R469 | VRD-RA2EE471J | R | 470 1/4W Carbon | AA |
| R470 | VRD-RA2BE101J | R | 100 1/8W Carbon | AB |
| R471 | VRS-CY1JF272J | R | 2.7k 1/16W Metal Oxide | AA |
| R472 | VRS-CY1JF821J | R | 820 1/16W Metal Oxide | AA |
| R473 | VRD-RA2BE100J | R | 10 1/8W Carbon | AA |
| R474 | VRS-CY1JF151J | R | 150 1/16W Metal Oxide | AA |
| R475 | VRS-CY1JF151J | R | 150 1/16W Metal Oxide | AA |

| Ref. No. | Part No. | ★ | Description | Code |
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| **PWB-A** | **DUNTKA122FMW5 (CX68KF5)** | | | |
| **PWB-A** | **DUNTKA122WEV6 (SX68KF7)** | | | |
| **MAIN UNIT (Continued)** | | | | |
| R477 | VRS-CY1JF151J | R | 150 1/16W Metal Oxide | AA |
| R478 | VRS-CY1JF103J | R | 10k 1/16W Metal Oxide | AA |
| R479 | VRS-CY1JF151J | R | 150 1/16W Metal Oxide | AA |
| R480 | VRS-CY1JF151J | R | 150 1/16W Metal Oxide | AA |
| R481 | VRS-CY1JF151J | R | 150 1/16W Metal Oxide | AA |
| R482 | VRS-CY1JF750J | R | 75 1/16W Metal Oxide | AA |
| R483 | VRD-RA2BE101J | R | 100 1/8W Carbon | AB |
| R484 | VRS-CY1JF103J | R | 10k 1/16W Metal Oxide | AA |
| R485 | VRS-CY1JF151J | R | 150 1/16W Metal Oxide | AA |
| R486 | VRS-CY1JF151J | R | 150 1/16W Metal Oxide | AA |
| R487 | VRD-RA2BE101J | R | 100 1/8W Carbon | AB |
| R488 | VRD-RA2BE101J | R | 100 1/8W Carbon | AB |
| R500 | VRS-CY1JF562F | R | 5.6k 1/16W Metal Oxide | AA |
| R504 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R600 | VRD-RA2BE153J | R | 15k 1/8W Carbon | AA |
| R601 | VRS-CY1JF822J | R | 8.2k 1/16W Metal Oxide | AA |
| R602 | VRS-CY1JF102J | R | 1.0k 1/16W Metal Oxide | AA |
| R603 | VRD-RA2BE101J | R | 100 1/8W Carbon | AB |
| R604 | VRS-CY1JF224J | R | 220k 1/16W Metal Oxide | AA |
| R605 | VRD-RA2BE474J | R | 470k 1/8W Carbon | AA |
| R606 | VRD-RA2EE395J | R | 3.9M 1/4W Carbon | AA |
| R608 | VRS-CY1JF102J | R | 1.0k 1/16W Metal Oxide | AA |
| R609 | VRS-CY1JF222J | R | 2.2k 1/16W Metal Oxide | AA |
| R610 | VRS-CY1JF102J | R | 1.0k 1/16W Metal Oxide | AA |
| R613 | VRS-CY1JF103J | R | 10k 1/16W Metal Oxide | AA |
| R614 | VRD-RA2BE103J | R | 10k 1/8W Carbon | AA |
| R617 | VRD-RA2EE561J | R | 560 1/4W Carbon (SX68KF7) | AA |
| R620 | VRS-VV3AB470J | R | 47 1W Metal Oxide | AA |
| R621 | VRS-VV3AB470J | R | 47 1W Metal Oxide | AA |
| R623 | VRS-CY1JF103J | R | 10k 1/16W Metal Oxide | AA |
| R624 | VRD-RA2BE103J | R | 10k 1/8W Carbon | AA |
| R625 | VRS-CY1JF103J | R | 10k 1/16W Metal Oxide | AA |
| R626 | VRS-CY1JF562J | R | 5.6k 1/16W Metal Oxide | AA |
| R627 | VRS-CY1JF184J | R | 180k 1/16W Metal Oxide | AA |
| R628 | VRS-CY1JF471J | R | 470 1/16W Metal Oxide | AA |
| R629 | VRS-CY1JF271J | R | 270 1/16W Metal Oxide | AA |
| R630 | VRS-CY1JF271J | R | 270 1/16W Metal Oxide | AA |
| R631 | VRS-CY1JF563J | R | 56k 1/16W Metal Oxide | AA |
| R632 | VRS-CY1JF223J | R | 22k 1/16W Metal Oxide | AA |
| R633 | VRD-RA2BE103J | R | 10k 1/8W Carbon | AA |
| R634 | VRS-CY1JF223J | R | 22k 1/16W Metal Oxide | AA |
| R635 | VRS-CY1JF684J | R | 680k 1/16W Metal Oxide | AA |
| R639 | VRS-CY1JF102J | R | 1.0k 1/16W Metal Oxide | AA |
| R800 | VRS-CY1JF333J | R | 33k 1/16W Metal Oxide | AA |
| R801 | VRD-RA2BE102J | R | 1.0k 1/8W Carbon | AA |
| R802 | VRS-CY1JF272J | R | 2.7k 1/16W Metal Oxide | AA |
| R803 | VRS-CY1JF561J | R | 560 1/16W Metal Oxide | AA |
| R804 | VRS-CY1JF561J | R | 560 1/16W Metal Oxide | AA |
| R805 | VRS-CY1JF561J | R | 560 1/16W Metal Oxide | AA |
| R806 | VRS-CY1JF272J | R | 2.7k 1/16W Metal Oxide | AA |
| R807 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R808 | VRS-CY1JF272J | R | 2.7k 1/16W Metal Oxide | AA |
| R809 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R810 | VRS-CY1JF272J | R | 2.7k 1/16W Metal Oxide | AA |
| R811 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R820 | VRD-RA2BE101J | R | 100 1/8W Carbon | AB |
| R821 | VRD-RA2BE101J | R | 100 1/8W Carbon | AB |
| R822 | VRS-CY1JF221J | R | 220 1/16W Metal Oxide | AA |
| R823 | VRS-CY1JF221J | R | 220 1/16W Metal Oxide | AA |
| R824 | VRS-CY1JF221J | R | 220 1/16W Metal Oxide | AA |
| R825 | VRS-CY1JF221J | R | 220 1/16W Metal Oxide | AA |
| R826 | VRS-CY1JF471J | R | 470 1/16W Metal Oxide | AA |
| R828 | VRD-RA2BE271J | R | 270 1/8W Carbon | AA |
| R1000 | VRS-CY1JF333J | R | 33k 1/16W Metal Oxide | AA |
| R1001 | VRS-CY1JF562J | R | 5.6k 1/16W Metal Oxide | AA |
| R1002 | VRS-CY1JF103J | R | 10k 1/16W Metal Oxide | AA |
| R1003 | VRS-CY1JF562J | R | 5.6k 1/16W Metal Oxide | AA |
| R1004 | VRS-CY1JF333J | R | 33k 1/16W Metal Oxide | AA |
| R1005 | VRS-CY1JF103J | R | 10k 1/16W Metal Oxide | AA |
| R1006 | VRS-CY1JF562J | R | 5.6k 1/16W Metal Oxide | AA |
| R1007 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R1008 | VRD-RA2BE101J | R | 100 1/8W Carbon | AB |
| R1009 | VRS-CY1JF562J | R | 5.6k 1/16W Metal Oxide | AA |
| R1010 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R1011 | VRS-CY1JF103J | R | 10k 1/16W Metal Oxide | AA |
| R1013 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R1018 | VRS-CY1JF103J | R | 10k 1/16W Metal Oxide | AA |
| R1019 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R1020 | VRD-RA2BE562J | R | 5.6k 1/8W Carbon | AA |
| R1021 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R1022 | VRD-RA2BE101J | R | 100 1/8W Carbon | AB |
| R1023 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R1025 | VRS-CY1JF563J | R | 56k 1/16W Metal Oxide | AA |
| R1026 | VRS-CY1JF563J | R | 56k 1/16W Metal Oxide (CX68KF5) | AA |
| R1028 | VRD-RA2BE103J | R | 10k 1/8W Carbon | AA |
| R1029 | VRS-CY1JF222J | R | 2.2k 1/16W Metal Oxide | AA |
| R1030 | VRD-RA2BE563J | R | 56k 1/8W Carbon | AA |
| R1031 | VRD-RA2BE563J | R | 56k 1/8W Carbon | AA |
| R1032 | VRS-CY1JF563J | R | 56k 1/16W Metal Oxide | AA |
| R1033 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R1034 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R1035 | VRS-CY1JF103J | R | 10k 1/16W Metal Oxide | AA |
| R1036 | VRD-RA2BE101J | R | 100 1/8W Carbon | AB |
| R1037 | VRD-RA2BE101J | R | 100 1/8W Carbon | AB |
| R1039 | VRD-RA2BE101J | R | 100 1/8W Carbon | AB |
| R1040 | VRS-CY1JF332J | R | 3.3k 1/16W Metal Oxide | AA |
| R1041 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R1042 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R1043 | VRD-RA2BE101J | R | 100 1/8W Carbon | AB |
| R1044 | VRS-CY1JF332J | R | 3.3k 1/16W Metal Oxide | AA |
| R1045 | VRS-CY1JF563J | R | 56k 1/16W Metal Oxide | AA |
| R1046 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R1047 | VRS-CY1JF563J | R | 56k 1/16W Metal Oxide | AA |
| R1048 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R1049 | VRS-CY1JF332J | R | 3.3k 1/16W Metal Oxide | AA |
| R1050 | VRS-CY1JF332J | R | 3.3k 1/16W Metal Oxide | AA |
| R1051 | VRS-CY1JF332J | R | 3.3k 1/16W Metal Oxide | AA |
| R1052 | VRS-CY1JF332J | R | 3.3k 1/16W Metal Oxide | AA |
| R1053 | VRS-CY1JF103J | R | 10k 1/16W Metal Oxide | AA |
| R1056 | VRS-CY1JF103J | R | 10k 1/16W Metal Oxide | AA |
| R1060 | VRS-CY1JF223J | R | 22k 1/16W Metal Oxide | AA |
| R1061 | VRS-CY1JF561J | R | 560 1/16W Metal Oxide | AA |
| R1062 | VRS-CY1JF562J | R | 5.6k 1/16W Metal Oxide | AA |
| R1067 | VRS-CY1JF103J | R | 10k 1/16W Metal Oxide | AA |
| R1068 | VRD-RA2BE100J | R | 10 1/8W Carbon (SX68KF7) | AA |
| R1090 | VRD-RA2BE102J | R | 1.0k 1/8W Carbon | AA |
| R1301 | VRS-CY1JF182J | R | 1.8k 1/16W Metal Oxide | AA |
| R1302 | VRS-CY1JF182J | R | 1.8k 1/16W Metal Oxide | AA |
| R1303 | VRD-RA2BE102J | R | 1.0k 1/8W Carbon | AA |
| R1304 | VRD-RA2BE102J | R | 1.0k 1/8W Carbon | AA |
| R1305 | VRS-CY1JF224J | R | 220k 1/16W Metal Oxide | AA |
| R1306 | VRD-RA2BE222J | R | 2.2k 1/8W Carbon | AA |
| R1307 | VRS-CY1JF223J | R | 22k 1/16W Metal Oxide | AA |
| R1308 | VRS-CY1JF122J | R | 1.2k 1/16W Metal Oxide | AA |
| R1309 | VRN-VV3DBR68J | R | 0.68 2W Metal Film | AA |
| R1310 | VRS-CY1JF272J | R | 2.7k 1/16W Metal Oxide (SX68KF7) | AA |
| R1311 | VRD-RA2BE272J | R | 2.7k 1/8W Carbon (SX68KF7) | AA |
| R1313 | VRS-CY1JF102J | R | 1.0k 1/16W Metal Oxide | AA |
| R1314 | VRD-RA2BE102J | R | 1.0k 1/8W Carbon | AA |
| R1315 | VRD-RA2BE822J | R | 8.2k 1/8W Carbon | AA |
| R1320 | VRS-CY1JF102J | R | 1.0k 1/16W Metal Oxide | AA |
| R1321 | VRS-CY1JF564J | R | 560k 1/16W Metal Oxide | AA |
| R1322 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R1323 | VRS-CY1JF102J | R | 1.0k 1/16W Metal Oxide | AA |
| R1324 | VRS-CY1JF564J | R | 560k 1/16W Metal Oxide | AA |
| R1325 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R1326 | VRS-CY1JF102J | R | 1.0k 1/16W Metal Oxide | AA |
| R1327 | VRS-CY1JF564J | R | 560k 1/16W Metal Oxide | AA |
| R1328 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R1329 | VRS-CY1JF102J | R | 1.0k 1/16W Metal Oxide | AA |
| R1330 | VRS-CY1JF564J | R | 560k 1/16W Metal Oxide | AA |
| R1331 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R1332 | VRS-CY1JF104J | R | 100k 1/16W Metal Oxide | AA |

| Ref. No. | Part No. | ★ | Description | Code |
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| **PWB-A** | **DUNTKA122FMW5 (CX68KF5)** | | | |
| **PWB-A** | **DUNTKA122WEV6 (SX68KF7)** | | | |
| **MAIN UNIT (Continued)** | | | | |
| R1333 | VRD-RA2BE101J | R | 100 1/8W Carbon | AB |
| R1334 | VRD-RA2BE561J | R | 560 1/8W Carbon | AA |
| R1335 | VRS-CY1JF473J | R | 47k 1/16W Metal Oxide | AA |
| R1336 | VRS-CY1JF102J | R | 1.0k 1/16W Metal Oxide | AA |
| R1337 | VRS-CY1JF104J | R | 100k 1/16W Metal Oxide | AA |
| R1338 | VRD-RA2BE101J | R | 100 1/8W Carbon | AB |
| R1339 | VRD-RA2BE561J | R | 560 1/8W Carbon | AA |
| R1340 | VRS-CY1JF473J | R | 47k 1/16W Metal Oxide | AA |
| R1341 | VRS-CY1JF102J | R | 1.0k 1/16W Metal Oxide | AA |
| R1342 | VRD-RA2BE223J | R | 22k 1/8W Carbon | AA |
| R1343 | VRS-CY1JF102J | R | 1.0k 1/16W Metal Oxide | AA |
| R1344 | VRS-CY1JF564J | R | 560k 1/16W Metal Oxide | AA |
| R1345 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R1346 | VRS-CY1JF102J | R | 1.0k 1/16W Metal Oxide | AA |
| R1347 | VRS-CY1JF564J | R | 560k 1/16W Metal Oxide | AA |
| R1348 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R1355 | VRS-CY1JF102J | R | 1.0k 1/16W Metal Oxide | AA |
| R5400 | VRS-CY1JF103J | R | 10k 1/16W Metal Oxide | AA |
| R5401 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R5402 | VRS-CY1JF103J | R | 10k 1/16W Metal Oxide | AA |
| R5403 | VRS-CY1JF103J | R | 10k 1/16W Metal Oxide | AA |
| R5404 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R5405 | VRS-CY1JF102J | R | 1.0k 1/16W Metal Oxide | AA |
| R5408 | VRS-CY1JF473J | R | 47k 1/16W Metal Oxide | AA |
| R5409 | VRS-CY1JF223J | R | 22k 1/16W Metal Oxide | AA |
| R5410 | VRS-CY1JF102J | R | 1.0k 1/16W Metal Oxide | AA |
| R5411 | VRS-CY1JF122J | R | 1.2k 1/16W Metal Oxide | AA |
| R5412 | VRS-CY1JF152J | R | 1.5k 1/16W Metal Oxide | AA |
| R5413 | VRS-CY1JF102J | R | 1.0k 1/16W Metal Oxide | AA |
| R5414 | VRD-RA2BE101J | R | 100 1/8W Carbon | AB |
| R5415 | VRS-CY1JF101J | R | 100 1/16W Metal Oxide | AA |
| R5416 | VRS-CY1JF563J | R | 56k 1/16W Metal Oxide | AA |
| R5417 | VRS-CY1JF273J | R | 27k 1/16W Metal Oxide | AA |
| R5418 | VRS-CY1JF221J | R | 220 1/16W Metal Oxide | AA |
| R5419 | VRS-CY1JF102J | R | 1.0k 1/16W Metal Oxide | AA |
| R5420 | VRS-CY1JF221J | R | 220 1/16W Metal Oxide | AA |
| R5421 | VRS-CY1JF102J | R | 1.0k 1/16W Metal Oxide | AA |
| R5423 | VRS-CY1JF473J | R | 47k 1/16W Metal Oxide | AA |
| R5424 | VRS-CY1JF473J | R | 47k 1/16W Metal Oxide | AA |
| **MISCELLANEOUS PARTS** | | | | |
| J400 | QTANJ0967CEZZ | R | Terminal | AP |
| J401 | QTANJ0527CEZZ | R | Terminal | AL |
| P500 | QPLGN0261CEZZ | R | Plug, 2-pin(G4) | AB |
| P800 | QPLGN0841CEZZ | R | Plug, 8-pin(KY) | AB |
| P1000 | QPLGN0661CEZZ | R | Plug, 6-pin(BC) | AD |
| P1300 | QPLGN0461CEZZ | R | Plug, 4-pin(SS) | AB |
| P1303 | QPLGN0361CEZZ | R | Plug, 3-pin(SA) | AB |
| SC400 | QSOCD0430CEZZ | R | Socket, S-Video | AE |
| SC801 | QSOCZ1040CEZZ | R | Socket, 10-pin(XD) | AD |
| SC1000 | QSOCZ1040CEZZ | R | Socket, 10-Pin(XA) | AD |
| SC1001 | QSOCZ1040CEZZ | R | Socket, 10-pin(XB) | AD |
| SC1002 | QSOCN1895REZZ | R | Socket, 18-pin(RC) | AC |
| SLD1001 | PSLDM0233PEFW | R | Shield | AC |
| TP201 | QLUGP0102PEZZ | R | Lug, Test Point | AA |
| TP801 | QLUGP0102PEZZ | R | Lug, Test Point | AA |
| TP802 | QLUGP0102PEZZ | R | Lug, Test Point | AA |
| TP803 | QLUGP0102PEZZ | R | Lug, Test Point | AA |
| TP1300 | QLUGP0102PEZZ | R | Lug, Test Point | AA |
| RDA601 | PRDAR0259PEFW | R | Heat Sink, for IC601 | AE |
| RDA1300 | PRDAR0299PEFW | R | Heat Sink, for IC1300 | AH |
| | LX-BZ3100CEFD | R | Screw | AA |

| Ref. No. | Part No. | ★ | Description | Code |
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| **PWB-B** | **DUNTKA123FMV5** | | | |
| **POWER UNIT** | | | | |
| **INTEGRATED CIRCUITS** | | | | |
| IC700 | VHiTDA16846-1 | R | TDA16846 | AN |
| IC701 | RH-FX0008GEZZ | R | PC123FY8 | AE |
| IC702 | RH-FX0008GEZZ | R | PC123FY8 | AE |
| IC750 | VHiSE120N//-1 | R | SE120N | AG |
| IC1501 | VHiTA8427K/-1 | R | TA8427K | AL |
| IC1680 | VHiiR9358//-1 | R | IR9358 | AD |
| IC1700 | VHiMiP0253/-1 | R | MIP0253SP | AM |
| ⚠ IC1701 | RH-FX0008GEZZ | R | PC123FY8 | AE |
| IC1751 | RH-iX0037CEZZ | R | UPC574J | AF |
| **TRANSISTORS** | | | | |
| Q700 | VSSPP11N60C-1 | R | SPP11N60C | AR |
| Q701 | VS2SC3198-Y-1 | R | 2SC3198-Y | AA |
| Q750 | VS2SC3198-Y-1 | R | 2SC3198-Y | AA |
| Q751 | VS2SA1266-Y-1 | R | 2SA1266-Y | AA |
| Q752 | VS2SC3198-G-1 | R | 2SC3198-G | AA |
| Q753 | VS2SC1959Y/1E | R | 2SC1959Y | AC |
| Q1534 | VS2SC3198-Y-1 | R | 2SC3198-Y | AA |
| ⚠ Q1604 | VS2SC3198-Y-1 | R | 2SC3198-Y | AA |
| Q1622 | VS2SC3207//-1 | R | 2SC3207 | AC |
| ⚠ Q1630 | VS2SD2581++2E | R | 2SD2581 | AM |
| Q1670 | VS2SA1266-Y-1 | R | 2SA1266-Y | AA |
| Q1671 | VS2SD1830//1E | R | 2SD1830 | AF |
| Q1680 | VS2SC5022//1E | R | 2SC5022 | AG |
| Q1681 | VS2SC3198-Y-1 | R | 2SC3198-Y | AA |
| **DIODES** | | | | |
| D700 | RH-DX0336CEZZ | R | Diode | AH |
| D701 | RH-DX0130CEZZ | R | Diode | AE |
| D702 | RH-DX0321CEZZ | R | Diode | AC |
| D703 | RH-DX0130CEZZ | R | Diode | AE |
| D704 | RH-EX0636GEZZ | R | Zener Diode | AC |
| D705 | RH-DX0475CEZZ | R | Diode | AB |
| D707 | RH-DX0475CEZZ | R | Diode | AB |
| D750 | RH-DX0475CEZZ | R | Diode | AB |
| D751 | RH-DX0243CEZZ | R | Diode | AF |
| D752 | RH-DX0373CEZZ | R | Diode | AC |
| D753 | RH-DX0373CEZZ | R | Diode | AC |
| D754 | RH-DX0452CEZZ | R | Diode | AH |
| D755 | RH-DX0475CEZZ | R | Diode | AB |
| D756 | RH-EX0152CEZZ | R | Zener Diode | AE |
| D757 | RH-EX0643GEZZ | R | Zener Diode | AB |
| D758 | RH-DX0475CEZZ | R | Diode | AB |
| D759 | RH-DX0475CEZZ | R | Diode | AB |
| D760 | RH-DX0475CEZZ | R | Diode | AB |
| D761 | RH-DX0475CEZZ | R | Diode | AB |
| D1534 | RH-DX0279CEZZ | R | Diode | AB |
| D1535 | RH-EX0665GEZZ | R | Zener Diode | AA |
| D1576 | RH-DX0127CEZZ | R | Diode | AC |
| D1610 | RH-DX0202CEZZ | R | Diode | AD |
| ⚠ D1620 | RH-DX0475CEZZ | R | Diode | AB |
| ⚠ D1621 | RH-EX0655GEZZ | R | Zener Diode | AB |
| D1631 | RH-DX0449CEZZ | R | Diode | AK |
| D1651 | RH-DX0302CEZZ | R | Diode | AC |
| D1659 | RH-DX0130CEZZ | R | Diode | AE |
| D1664 | RH-EX0631GEZZ | R | Zener Diode | AA |
| D1680 | RH-DX0484CEZZ | R | Diode | AE |
| D1681 | RH-DX0475CEZZ | R | Diode | AB |
| D1682 | RH-DX0475CEZZ | R | Diode | AB |
| D1683 | RH-DX0475CEZZ | R | Diode | AB |
| D1684 | RH-DX0475CEZZ | R | Diode | AB |
| D1700 | RH-DX0279CEZZ | R | Diode | AB |
| D1701 | RH-DX0279CEZZ | R | Diode | AB |
| D1702 | RH-DX0279CEZZ | R | Diode | AB |
| D1703 | RH-DX0279CEZZ | R | Diode | AB |
| D1750 | RH-DX0407CEZZ | R | Diode | AD |
| D1751 | RH-EX1329CEZZ | R | Zener Diode | AD |
| D1755 | RH-DX0475CEZZ | R | Diode | AB |
| D1756 | RH-EX0619GEZZ | R | Zener Diode | AA |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| **PWB-B** | **DUNTKA123FMV5 POWER UNIT (Continued)** | | | |
| | **PACKAGED CIRCUIT** | | | |
| PR700 | RMPTP0085CEZZ | R | Packaged Circuit | AL |
| | **COILS** | | | |
| L700 | RCiLF0366CEZZ | R | Coil | AH |
| ⚠ L701 | RCiLF0364CEZZ | R | Coil | AK |
| L751 | RCiLP0268CEZZ | R | Coil | AE |
| L1640 | RCiLZ0982CEZZ | R | Coil | AK |
| L1641 | RCiLZ1034CEZZ | R | Coil | AM |
| L1670 | RCiLZ1005CEZZ | R | Coil | AH |
| L1680 | RCiLZ0976CEZZ | R | Coil | AK |
| L1681 | VP-XF8R2K0000 | R | Peaking 8.2µH | AB |
| | **TRANSFORMERS** | | | |
| ⚠ T700 | RTRNZ0201PEZZ | R | Transformer | AT |
| ⚠ T1602 | RTRNF0205PEZZ | R | H-Volt Transformer | BE |
| ⚠ T1620 | RTRNZ0731CEZZ | R | Transformer | AG |
| T1680 | RTRNZ0726CEZZ | R | Transformer | AM |
| ⚠ T1700 | RTRNZ0190PEZZ | R | Transformer | AH |
| | **CONTROL** | | | |
| R1759 | RVR-M4634GEZZ | R | Sub Contrast Adj. | AB |
| | **CAPACITORS** | | | |
| C701 | VCFYSB2EB224K | R | 0.22 250V Mylar | AD |
| C702 | RC-FZ086CGEZZ | R | 0.47 AC250V Polypro Film | AF |
| C703 | RC-FZ016SCEZZ | R | 0.1 AC250V Polypro Film | AE |
| C704 | RC-KZ0029CEZZ | R | 0.01 AC250V Ceramic | AC |
| C705 | RC-KZ0029CEZZ | R | 0.01 AC250V Ceramic | AC |
| C706 | RC-KZ0029CEZZ | R | 0.01 AC250V Ceramic | AC |
| C707 | RC-KZ0029CEZZ | R | 0.01 AC250V Ceramic | AC |
| C708 | VCQYTA1HM332J | R | 3300p 50V Mylar | AA |
| C709 | VCKYPA1HB102K | R | 1000p 50V Ceramic | AA |
| C710 | VCKYPA1HB101K | R | 100p 50V Ceramic | AA |
| C711 | VCKYPA1HB471K | R | 470p 50V Ceramic | AA |
| C712 | VCQPSC2JA333K | R | 0.033 630V Mylar | AB |
| C713 | RC-KZ0334CEZZ | R | 270p 2kV Ceramic | AC |
| C714 | RC-KZ0334CEZZ | R | 270p 2kV Ceramic | AC |
| C715 | RC-EZ1060CEZZ | R | 330 450V Electrolytic | AT |
| C716 | VCQYTA1HM102J | R | 1000p 50V Mylar | AA |
| C717 | VCEA0A1EW107M | R | 100 25V Electrolytic | AC |
| C718 | RC-KZ020SCEZZ | R | 2200p 4kV Ceramic | AE |
| ⚠ C719 | RC-KZ016SCEZZ | R | 470p 4kV Ceramic | AD |
| C720 | VCQYTA1HM681J | R | 680p 50V Mylar | AB |
| C721 | VCKYPA1HB102K | R | 1000p 50V Ceramic | AA |
| C727 | VCKYPA1HF103Z | R | 0.01 50V Ceramic | AA |
| C728 | VCKYPA1HF103Z | R | 0.01 50V Ceramic | AA |
| C732 | VCKYPA1HB101K | R | 100p 50V Ceramic | AA |
| C750 | RC-KZ1022CEZZ | R | 47p 1kV Ceramic | AC |
| C751 | VCKYPA2HB471K | R | 470p 500V Ceramic | AA |
| C752 | VCKYPA2HB471K | R | 470p 500V Ceramic | AA |
| C753 | VCKYPA2HB471K | R | 470p 500V Ceramic | AA |
| C754 | RC-KZ1022CEZZ | R | 47p 1kV Ceramic | AC |
| C755 | RC-EZ0004PEZZ | R | 2200 35V Electrolytic | AH |
| C756 | RC-EZ1226CEZZ | R | 3300 16V Electrolytic | AK |
| C757 | RC-EZ1100CEZZ | R | 1000 25V Electrolytic | AF |
| C758 | RC-EZ0006PEZZ | R | 220 160V Electrolytic | AK |
| C760 | RC-EZ0006PEZZ | R | 220 160V Electrolytic | AK |
| C761 | VCQYTA1HM104J | R | 0.1 50V Mylar | AA |
| C763 | RC-EZ0308CEZZ | R | 330 160V Electrolytic | AF |
| C764 | VCKYPA2HB102K | R | 1000p 500V Ceramic | AA |
| C765 | VCKYPA1HB101K | R | 100p 50V Ceramic | AA |
| C767 | VCEA0A2AW475M | R | 4.7 100V Electrolytic | AB |
| C768 | VCKYPA1HF103Z | R | 0.01 50V Ceramic | AA |
| C771 | VCKYPA2HB221K | R | 220p 500V Ceramic | AA |
| C1512 | VCQYTA1HM563J | R | 0.056 50V Mylar | AB |
| C1513 | VCKYPA2HB391K | R | 390p 500V Ceramic | AA |
| C1514 | VCQYTA1HM392J | R | 3900p 50V Mylar | AA |
| C1521 | VCKYPA1HF103Z | R | 0.01 50V Ceramic | AA |
| C1525 | VCKYPA1HB391K | R | 390p 50V Ceramic | AA |
| C1526 | VCKYPA1HB391K | R | 390p 50V Ceramic | AA |
| C1534 | VCEA0A1HW107M | R | 100 50V Electrolytic | AB |
| C1535 | VCFYAA2AA224J | R | 0.22 100V Mylar | AD |
| C1536 | VCEA0A1HW474M | R | 0.47 50V Electrolytic | AB |
| C1537 | VCEA0A1VW108M | R | 1000 35V Electrolytic | AD |
| C1538 | VCEA0A1HW105M | R | 1.0 50V Electrolytic | AB |
| C1539 | VCQYTA1HM683J | R | 0.068 50V Mylar | AB |
| C1540 | VCKYPA1HB331K | R | 330p 50V Ceramic | AA |
| C1542 | VCEA0A1VW107M | R | 100 35V Electrolytic | AC |
| C1543 | VCQYTA1HM102J | R | 1000p 50V Mylar | AA |
| C1572 | VCEA0H1VW228M | R | 2200 35V Electrolytic | AH |
| C1575 | RC-QZ0037CEZZ | R | 0.01 100V Mylar | AB |
| C1576 | VCKYPA2HB102K | R | 1000p 500V Ceramic | AA |
| C1610 | VCFYSB2EB224K | R | 0.22 250V Polypro Film | AD |
| ⚠ C1619 | VCKYPA1HF103Z | R | 0.01 50V Ceramic | AA |
| C1623 | VCFPVC2DB474J | R | 0.47 200V Polypro Film | AE |
| C1625 | VCKYPA2HB561K | R | 560p 500V Ceramic | AA |
| C1627 | VCKYPA1HB102K | R | 1000p 50V Ceramic | AA |
| C1628 | VCQYTA2AA563K | R | 0.056 100V Mylar | AB |
| ⚠ C1632 | VCFPVC3CA103H | R | 0.01 1.6kV Polypro Film | AE |
| ⚠ C1633 | VCFPVC3CA912H | R | 9100p 1.6kV Polypro Film | AE |
| ⚠ C1635 | VCQPPC2JB223J | R | 0.022 630V Polypro Film | AC |
| ⚠ C1636 | VCQPPC2JB223J | R | 0.022 630V Polypro Film | AC |
| C1638 | VCKYPA1HB472K | R | 4700p 50V Ceramic | AA |
| C1639 | RC-KZ0033CEZZ | R | 150p 2kV Ceramic | AB |
| C1644 | RC-FZ0364CEZZ | R | 0.62 250V Polypro Film | AF |
| C1651 | VCKYPA2HB102K | R | 1000p 500V Ceramic | AA |
| C1652 | VCEA0A2EW336M | R | 33 250V Electrolytic | AF |
| C1655 | VCCSPA2HL221K | R | 220p 500V Ceramic | AB |
| C1659 | VCEA0A1HW106M | R | 10 50V Electrolytic | AB |
| C1670 | RC-FZ0377CEZZ | R | 4.7 100V Polypro Film | AF |
| C1680 | VCFPVC3CA822H | R | 8200p 1.6kV Polypro Film | AE |
| C1681 | RC-KZ0024CEZZ | R | 1000p 2kV Ceramic | AC |
| C1682 | VCKYPH3DB561K | R | 560p 2kV Ceramic | AC |
| C1683 | VCE9GA1HW335M | R | 3.3 50V Elect. (N.P) | AB |
| C1684 | VCEA0A1VW106M | R | 10 35V Electrolytic | AB |
| C1695 | VCFYFA1HA224J | R | 0.22 50V Mylar | AB |
| C1696 | VCQYTA1HM103J | R | 0.01 50V Mylar | AA |
| C1700 | VCEA0A2GW475M | R | 4.7 400V Electrolytic | AE |
| C1701 | RC-KZ1022CEZZ | R | 47p 1kV Ceramic | AC |
| C1702 | VCQYTA1HM104J | R | 0.1 50V Mylar | AA |
| C1703 | RC-KZ016SCEZZ | R | 470 4kV Ceramic | AD |
| C1704 | RC-KZ0029CEZZ | R | 0.01 AC250V Ceramic | AC |
| C1705 | RC-KZ0029CEZZ | R | 0.01 AC250V Ceramic | AC |
| C1706 | RC-KZ0029CEZZ | R | 0.01 AC250V Ceramic | AC |
| C1707 | RC-KZ0029CEZZ | R | 0.01 AC250V Ceramic | AC |
| C1708 | RC-KZ0029CEZZ | R | 0.01 AC250V Ceramic | AC |
| C1750 | VCKYPA2HB221K | R | 220p 500V Ceramic | AA |
| C1751 | VCEA0A1CW477M | R | 470 16V Electrolytic | AC |
| C1753 | VCEA0A1HW106M | R | 10 50V Electrolytic | AB |
| C1754 | VCFYFA1HA184J | R | 0.18 50V Mylar | AC |
| | **RESISTORS** | | | |
| R701 | VRD-RM2HD391J | R | 390 1/2W Carbon | AA |
| R703 | VRW-KQ41C3R3K | R | 3.3 15W Cement | AG |
| ⚠ R705 | VRC-UA2HG825K | R | 8.2M 1/2W Solid | AA |
| ⚠ R706 | VRC-UA2HG825K | R | 8.2M 1/2W Solid | AA |
| R707 | VRD-RA2BE563J | R | 56k 1/8W Carbon | AA |
| R708 | VRD-RA2BE822J | R | 8.2k 1/8W Carbon | AA |
| R709 | VRD-RM2HD224J | R | 220k 1/2W Carbon | AA |
| R710 | VRD-RM2HD224J | R | 220k 1/2W Carbon | AA |
| R711 | VRD-RA2BE153J | R | 15k 1/8W Carbon | AA |
| R712 | VRD-RM2HD155J | R | 1.5M 1/2W Carbon | AB |
| R713 | VRD-RM2HD155J | R | 1.5M 1/2W Carbon | AB |
| R714 | VRD-RA2BE150J | R | 15 1/8W Carbon | AA |
| R715 | VRD-RA2BE680J | R | 68 1/8W Carbon | AA |
| R716 | VRD-RA2BE393J | R | 39k 1/8W Carbon | AA |
| R717 | VRS-KT3LB823J | R | 82k 3W Metal Oxide | AC |
| R718 | VRD-RA2BE103J | R | 10k 1/8W Carbon | AA |
| R720 | VRD-RM2HD105J | R | 1.0M 1/2W Carbon | AA |
| R721 | VRD-RM2HD123J | R | 12k 1/2W Carbon | AA |
| R723 | VRD-RM2HD102J | R | 1.0k 1/2W Carbon | AA |
| R725 | VRD-RM2HD155J | R | 1.5M 1/2W Carbon | AB |
| R726 | VRD-RM2HD155J | R | 1.5M 1/2W Carbon | AB |
| R750 | VRD-RA2BE102J | R | 1.0k 1/8W Carbon | AA |
| R751 | VRD-RA2BE102J | R | 1.0k 1/8W Carbon | AA |
| R752 | VRD-RA2BE273J | R | 27k 1/8W Carbon | AA |
| R753 | VRD-RA2BE102J | R | 1.0k 1/8W Carbon | AA |

| Ref. No. | Part No. | ★ | Description | | | Code |
|---|---|---|---|---|---|---|
| **PWB-B** | **DUNTKA123FMV5 POWER UNIT (Continued)** | | | | | |
| R754 | VRD-RA2BE102J | R | 1.0k | 1/8W | Carbon | AA |
| R755 | VRD-RA2BE102J | R | 1.0k | 1/8W | Carbon | AA |
| R756 | VRD-RA2BE102J | R | 1.0k | 1/8W | Carbon | AA |
| R757 | VRD-RA2BE103J | R | 10k | 1/8W | Carbon | AA |
| R758 | VRD-RA2BE103J | R | 10k | 1/8W | Carbon | AA |
| R759 | VRD-RA2BE272J | R | 2.7k | 1/8W | Carbon | AA |
| R761 | VRD-RA2BE332J | R | 3.3k | 1/8W | Carbon | AA |
| R762 | VRD-RA2BE562J | R | 5.6k | 1/8W | Carbon | AA |
| R763 | VRD-RA2BE153J | R | 15k | 1/8W | Carbon | AA |
| R1508 | VRD-RA2BE102J | R | 1.0k | 1/8W | Carbon | AA |
| ⚠ R1522 | VRG-RL2HB220J | R | 22 | 1/2W | Fuse Resistor | AB |
| R1523 | VRD-RA2BE124J | R | 120k | 1/8W | Carbon | AA |
| R1524 | VRD-RA2BE473J | R | 47k | 1/8W | Carbon | AA |
| R1531 | VRN-SV2HB2R7J | R | 2.7 | 1/2W | Metal Film | AA |
| R1532 | VRN-SV2HB2R7J | R | 2.7 | 1/2W | Metal Film | AA |
| R1533 | VRN-SV2HB2R7J | R | 2.7 | 1/2W | Metal Film | AA |
| R1534 | VRD-RA2BE151J | R | 150 | 1/8W | Carbon | AA |
| R1535 | VRD-RA2BE101J | R | 100 | 1/8W | Carbon | AB |
| R1538 | VRD-RM2HD123J | R | 12k | 1/2W | Carbon | AA |
| R1539 | VRD-RA2BE223J | R | 22k | 1/8W | Carbon | AA |
| R1540 | VRD-RA2BE274J | R | 270k | 1/8W | Carbon | AA |
| R1541 | VRS-VV3AB391J | R | 390 | 1W | Metal Oxide | AA |
| R1542 | VRD-RA2BE563J | R | 56k | 1/8W | Carbon | AA |
| R1543 | VRD-RA2BE561J | R | 560 | 1/8W | Carbon | AA |
| R1545 | VRS-VV3AB822J | R | 8.2k | 1W | Metal Oxide | AA |
| R1556 | VRD-RA2BE394J | R | 390k | 1/8W | Carbon | AA |
| R1557 | VRD-RA2BE273J | R | 27k | 1/8W | Carbon | AA |
| R1558 | VRD-RA2BE333J | R | 33k | 1/8W | Carbon | AA |
| R1559 | VRD-RA2BE102J | R | 1.0k | 1/8W | Carbon | AA |
| R1576 | VRN-VV3AB1R0J | R | 1.0 | 1W | Metal Film | AA |
| R1610 | VRS-VV3DB103J | R | 10k | 2W | Metal Oxide | AA |
| R1617 | VRD-RA2BE153J | R | 15k | 1/8W | Carbon | AA |
| R1618 | VRD-RA2BE153J | R | 15k | 1/8W | Carbon | AA |
| R1619 | VRD-RA2BE472J | R | 4.7k | 1/8W | Carbon | AA |
| R1620 | VRD-RA2BE101J | R | 100 | 1/8W | Carbon | AB |
| R1621 | VRD-RA2BE103J | R | 10k | 1/8W | Carbon | AA |
| R1622 | VRS-SU2HB102J | R | 1.0k | 1/2W | Metal Oxide | AA |
| R1623 | VRD-RM2HD393J | R | 39k | 1/2W | Carbon | AA |
| R1624 | VRS-KT3LB122J | R | 1.2k | 3W | Metal Oxide | AC |
| R1625 | VRS-VV3AB562J | R | 5.6k | 1W | Metal Oxide | AA |
| R1626 | VRD-RA2BE561J | R | 560 | 1/8W | Carbon | AA |
| R1627 | VRD-RA2BE681J | R | 680 | 1/8W | Carbon | AA |
| R1629 | VRW-KQ41C3R3K | R | 3.3 | 15W | Cement | AG |
| R1638 | VRD-RM2HD150J | R | 15 | 1/2W | Carbon | AA |
| R1647 | VRS-KT3LB122J | R | 1.2k | 3W | Metal Oxide | AC |
| ⚠ R1651 | RR-XZ0029CEZZ | R | 3.3 | 1/2W | Fuse Resistor | AB |
| R1654 | VRD-RM2HD102J | R | 1.0k | 1/2W | Carbon | AA |
| R1655 | VRD-RM2HD472J | R | 4.7k | 1/2W | Carbon | AA |
| R1659 | VRN-VV3DBR82J | R | 0.82 | 2W | Metal Film | AB |
| R1660 | VRD-RM2HD101J | R | 100 | 1/2W | Carbon | AA |
| R1661 | VRD-RM2HD101J | R | 100 | 1/2W | Carbon | AA |
| R1662 | VRD-RM2HD103J | R | 10k | 1/2W | Carbon | AA |
| R1670 | VRD-RA2BE102J | R | 1.0k | 1/8W | Carbon | AA |
| R1671 | VRD-RA2BE103J | R | 10k | 1/8W | Carbon | AA |
| R1672 | VRD-RA2BE472J | R | 4.7k | 1/8W | Carbon | AA |
| R1673 | VRD-RA2EE822J | R | 8.2k | 1/4W | Carbon | AA |
| R1674 | VRD-RM2HD182J | R | 1.8k | 1/2W | Carbon | AA |
| R1675 | VRN-VV3DBR33J | R | 0.33 | 2W | Metal Film | AA |
| R1680 | VRS-SV3LB154J | R | 150k | 3W | Metal Oxide | AC |
| R1681 | VRS-KT3LB104J | R | 100k | 3W | Metal Oxide | AC |
| R1682 | VRC-MA2HG333K | R | 33k | 1/2W | Solid | AA |
| R1683 | VRD-RA2BE332J | R | 3.3k | 1/8W | Carbon | AA |
| R1684 | VRD-RA2BE681J | R | 680 | 1/8W | Carbon | AA |
| R1685 | VRS-VV3AB181J | R | 180 | 1W | Metal Oxide | AA |
| R1686 | VRD-RA2BE103J | R | 10k | 1/8W | Carbon | AA |
| R1687 | VRD-RA2BE103J | R | 10k | 1/8W | Carbon | AA |
| R1688 | VRD-RA2BE473J | R | 47k | 1/8W | Carbon | AA |
| R1689 | VRD-RA2BE823J | R | 82k | 1/8W | Carbon | AA |
| R1690 | VRD-RA2BE822J | R | 8.2k | 1/8W | Carbon | AA |
| R1691 | VRD-RA2BE823J | R | 82k | 1/8W | Carbon | AA |
| R1695 | VRD-RA2BE224J | R | 220k | 1/8W | Carbon | AA |
| R1696 | VRD-RA2BE394J | R | 390k | 1/8W | Carbon | AA |
| R1700 | VRW-KP3HC330J | R | 33 | 5W | Cement | AD |
| R1752 | VRD-RA2BE102J | R | 1.0k | 1/8W | Carbon | AA |
| R1753 | VRS-VV3DB153J | R | 15k | 2W | Metal Oxide | AA |
| R1754 | VRD-RA2EE185J | R | 1.8M | 1/4W | Carbon | AA |
| R1755 | VRD-RA2BE103J | R | 10k | 1/8W | Carbon | AA |
| R1756 | VRD-RA2EE334J | R | 330k | 1/4W | Carbon | AA |
| R1757 | VRS-VV3AB103J | R | 10k | 1W | Metal Oxide | AA |
| R1760 | VRD-RA2EE104J | R | 100k | 1/4W | Carbon | AA |
| R1761 | VRD-RA2EE124J | R | 120k | 1/4W | Carbon | AA |

## MISCELLANEOUS PARTS

| | | | | |
|---|---|---|---|---|
| RY700 | RRLYJ0093CEZZ | R | Relay | AG |
| FB700 | RBLN-0037CEZZ | R | Ferrite Bead | AB |
| FB701 | RBLN-0037CEZZ | R | Ferrite Bead | AB |
| FB702 | RBLN-0037CEZZ | R | Ferrite Bead | AB |
| FB703 | RBLN-0037CEZZ | R | Ferrite Bead | AB |
| FB750 | RBLN-0037CEZZ | R | Ferrite Bead | AB |
| FB751 | RBLN-0037CEZZ | R | Ferrite Bead | AB |
| FB752 | RBLN-0037CEZZ | R | Ferrite Bead | AB |
| FB753 | RBLN-0037CEZZ | R | Ferrite Bead | AB |
| FB754 | RBLN-0037CEZZ | R | Ferrite Bead | AB |
| FB755 | RBLN-0037CEZZ | R | Ferrite Bead | AB |
| FB756 | RBLN-0037CEZZ | R | Ferrite Bead | AB |
| FB757 | RBLN-0037CEZZ | R | Ferrite Bead | AB |
| FB1500 | RBLN-0037CEZZ | R | Ferrite Bead | AB |
| FB1630 | RBLN-0047CEZZ | R | Ferrite Bead | AB |
| FB1631 | RBLN-0047CEZZ | R | Ferrite Bead | AB |
| FB1700 | RBLN-0037CEZZ | R | Ferrite Bead | AB |
| FB1750 | RBLN-0037CEZZ | R | Ferrite Bead | AB |
| P700 | QPLGN0360CEZZ | R | Plug, 3-pin(AC) | AC |
| P701 | QPLGN0260CEZZ | R | Plug, 2-pin(G) | AC |
| P750 | QPLGZ1040CEZZ | R | Plug, 10-pin(XB) | AE |
| P1500 | QPLGN0160FJZZ | R | Plug, 5-pin(K) | AD |
| P1501 | QPLGZ1040CEZZ | R | Plug, 10-pin(XD) | AE |
| P1530 | QPLGN0261CEZZ | R | Plug, 2-pin(G4) | AB |
| P1650 | QPLGN0741CEZZ | R | Plug, 7-pin(H) | AC |
| P1750 | QPLGZ1040CEZZ | R | Plug, 10-pin(XA) | AE |
| SC1603 | QTiPM0083CEZZ | R | Tip | AB |
| SG1680 | QSPGH0025CEZZ | R | Spark Gap | AC |
| SG1681 | QSPGH0025CEZZ | R | Spark Gap | AC |
| RDA700 | PRDAR0304PEFW | R | Heat Sink, for Q700 | AH |
| RDA701 | PRDAR0139PEFW | R | Heat Sink, for D700 | AC |
| RDA750 | PRDAR0160PEFW | R | Heat Sink, for D754 | AF |
| RDA1501 | PRDAR0213PEFW | R | Heat Sink, for IC1501 | AM |
| RDA1630 | PRDAR0249PEFW | R | Heat Sink, for Q1630 | AL |
| RDA1631 | PRDAR0198PEFW | R | Heat Sink, for D1631 | AG |
| RDA1671 | PRDAR0277PEFW | R | Heat Sink, for Q1671 | AF |
| RDA1680 | PRDAR0135PEFW | R | Heat Sink, for Q1680 | AE |
| | PZETM0016CEZZ | R | Insulator | AB |
| | QCNW-2428PEZZ | R | Connecting Cord | AC |
| | MSPRK0034BMFW | R | Spring | AC |
| | LHLDW1064PEKZ | R | Holder | AC |
| | LX-BZ0086TAFD | R | Screw | AA |
| | LX-BZ3049GEFD | R | Screw | AA |
| | LX-BZ3100CEFD | R | Screw | AA |
| | LX-TZ3004CEFD | R | Screw | AA |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|

## PWB-C DUNTKA075FMW3 CRT UNIT

### INTEGRATED CIRCUIT

| | | | | |
|---|---|---|---|---|
| IC850 | VHiTDA6103Q-1 | R | TDA6103Q/N3 | AL |

### TRANSISTORS

| | | | | |
|---|---|---|---|---|
| Q850 | VS2SA1266-Y-1 | R | 2SA1266-Y | AA |
| Q851 | VS2SC3198-Y-1 | R | 2SC3198-Y | AA |
| Q1504 | VS2SC3198-Y-1 | R | 2SC3198-Y | AA |
| Q1505 | VS2SA1266-Y-1 | R | 2SA1266-Y | AA |
| Q1506 | VS2SA1964E/-1 | R | 2SA1964E | AF |
| Q1507 | VS2SC5248E/-1 | R | 2SC5248E | AE |

### DIODES

| | | | | |
|---|---|---|---|---|
| D850 | RH-DX0220CEZZ | R | Diode | AB |
| D851 | RH-DX0220CEZZ | R | Diode | AB |
| D852 | RH-DX0220CEZZ | R | Diode | AB |
| D853 | RH-EX0647GEZZ | R | Zener Diode | AA |
| D854 | RH-DX0475CEZZ | R | Diode | AB |
| D855 | RH-DX0475CEZZ | R | Diode | AB |
| D890 | RH-EX0615GEZZ | R | Zener Diode | AA |
| D1502 | RH-DX0475CEZZ | R | Diode | AB |
| D1503 | RH-DX0475CEZZ | R | Diode | AB |
| D1506 | RH-DX0487CEZZ | R | Diode | AC |
| D1507 | RH-DX0487CEZZ | R | Diode | AC |
| D1508 | RH-DX0475CEZZ | R | Diode | AB |

### CAPACITORS

| | | | | | | |
|---|---|---|---|---|---|---|
| C850 | VCFYSB2EB823J | R | 0.082 | 250V | Mylar | AD |
| C851 | RC-KZ018JCEZZ | R | 0.01 | 3kV | Ceramic | AC |
| C852 | VCEA0A1CW106M | R | 10 | 16V | Electrolytic | AB |
| C853 | VCFYFA1HA224J | R | 0.22 | 50V | Mylar | AB |
| C854 | VCEA0A1AW108M | R | 1000 | 10V | Electrolytic | AC |
| C855 | VCEA0A2EW106M | R | 10 | 250V | Electrolytic | AD |
| C856 | VCEA0A1CW476M | R | 47 | 16V | Electrolytic | AB |
| C1501 | VCEA0A1CW476M | R | 47 | 16V | Electrolytic | AB |
| C1506 | VCKYPA1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C1508 | VCKYPA2HB472K | R | 4700p | 500V | Ceramic | AB |
| C1509 | VCKYPA2HB472K | R | 4700p | 500V | Ceramic | AB |
| C1510 | VCKYPA1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C1511 | VCKYPA1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C1515 | VCEA0A1CW476M | R | 47 | 16V | Electrolytic | AB |
| C1516 | VCEA0A1CW476M | R | 47 | 16V | Electrolytic | AB |
| C1517 | VCEA0A2AW106M | R | 10 | 100V | Electrolytic | AC |
| C1518 | VCCSPA2HL560K | R | 56p | 500V | Ceramic | AA |
| C1519 | VCEA4A2CN106M | R | 10 | 160V | Electrolytic | AC |

### RESISTORS

| | | | | | | |
|---|---|---|---|---|---|---|
| R850 | VRD-RA2BE152J | R | 1.5k | 1/8W | Carbon | AA |
| R851 | VRD-RA2BE152J | R | 1.5k | 1/8W | Carbon | AA |
| R852 | VRD-RA2BE152J | R | 1.5k | 1/8W | Carbon | AA |
| R853 | VRD-RA2BE272J | R | 2.7k | 1/8W | Carbon | AA |
| R854 | VRD-RA2BE272J | R | 2.7k | 1/8W | Carbon | AA |
| R855 | VRD-RA2BE272J | R | 2.7k | 1/8W | Carbon | AA |
| R856 | VRD-RM2HD224J | R | 220k | 1/2W | Carbon | AA |
| R857 | VRD-RM2HD224J | R | 220k | 1/2W | Carbon | AA |
| R858 | VRD-RM2HD224J | R | 220k | 1/2W | Carbon | AA |
| R862 | VRC-MA2HG152K | R | 1.5k | 1/2W | Solid | AA |
| R863 | VRC-MA2HG152K | R | 1.5k | 1/2W | Solid | AA |
| R864 | VRC-MA2HG152K | R | 1.5k | 1/2W | Solid | AA |
| R868 | VRD-RA2BE272J | R | 2.7k | 1/8W | Carbon | AA |
| R869 | VRD-RA2BE562J | R | 5.6k | 1/8W | Carbon | AA |
| R870 | VRD-RA2BE223J | R | 22k | 1/8W | Carbon | AA |
| R871 | VRD-RA2BE223J | R | 22k | 1/8W | Carbon | AA |
| R872 | VRD-RA2EE680J | R | 68 | 1/4W | Carbon | AA |
| R873 | VRD-RM2HD224J | R | 220k | 1/2W | Carbon | AA |
| R874 | VRD-RM2HD184J | R | 180k | 1/2W | Carbon | AA |
| R875 | VRD-RM2HD184J | R | 180k | 1/2W | Carbon | AA |
| R876 | VRD-RM2HD184J | R | 180k | 1/2W | Carbon | AA |
| R877 | VRD-RA2BE103J | R | 10k | 1/8W | Carbon | AA |
| R880 | VRD-RM2HD332J | R | 3.3k | 1/2W | Carbon | AA |
| R1511 | VRD-RA2BE101J | R | 100 | 1/8W | Carbon | AB |
| ⚠ R1513 | VRS-VV3AB471J | R | 470 | 1W | Metal Oxide | AA |
| R1514 | VRD-RA2BE100J | R | 10 | 1/8W | Carbon | AA |
| R1515 | VRD-RA2BE820J | R | 82 | 1/8W | Carbon | AA |
| R1516 | VRD-RA2BE820J | R | 82 | 1/8W | Carbon | AA |
| R1517 | VRD-RA2BE122J | R | 1.2k | 1/8W | Carbon | AA |
| R1518 | VRD-RA2BE683J | R | 68k | 1/8W | Carbon | AA |
| R1519 | VRD-RA2BE123J | R | 12k | 1/8W | Carbon | AA |
| R1520 | VRD-RA2BE683J | R | 68k | 1/8W | Carbon | AA |
| R1521 | VRD-RA2BE122J | R | 1.2k | 1/8W | Carbon | AA |
| R1525 | VRD-RA2EE560J | R | 56 | 1/4W | Carbon | AA |
| R1526 | VRD-RA2EE560J | R | 56 | 1/4W | Carbon | AA |
| R1527 | VRD-RM2HD1R5J | R | 1.5 | 1/2W | Carbon | AA |
| R1528 | VRD-RM2HD1R5J | R | 1.5 | 1/2W | Carbon | AA |
| ⚠ R1529 | VRS-VV3DB221J | R | 220 | 2W | Metal Oxide | AA |
| R1530 | VRD-RA2BE222J | R | 2.2k | 1/8W | Carbon | AA |

### MISCELLANEOUS PARTS

| | | | | |
|---|---|---|---|---|
| FB850 | RBLN-0037CEZZ | R | Ferrite Bead | AB |
| FB1501 | RBLN-0020CEZZ | R | Ferrite Bead | AB |
| P852 | QPLGN0241CEZZ | R | Plug, 2-pin(PU) | AA |
| P854 | QPLGN0741CEZZ | R | Plug, 7-pin(H) | AC |
| P856 | QTiPM0083CEZZ | R | Tip(K857) | AB |
| P858 | QTiPM0083CEZZ | R | Tip(CE) | AB |
| P860 | QPLGN0841CEZZ | R | Plug, 8-pin(KY) | AB |
| SC850 | QSOCV0936CEZZ | R | CRT Socket | AM |
| RDA850 | PRDAR0248PEFW | R | Heat Sink, for IC850 | AF |
| RDA1506 | PRDAR0083PEFW | R | Heat Sink, for Q1506 | AD |
| RDA1507 | PRDAR0083PEFW | R | Heat Sink, for Q1507 | AD |
| | LX-BZ3100CEFD | R | Screw | AA |

## PWB-D DUNTK9668FMV8 (SX68KF7) IGR UNIT

### INTEGRATED CIRCUITS

| | | | | |
|---|---|---|---|---|
| IC2300 | VHiTDA9873H-1 | R | I.C. | AZ |
| IC2301 | VHiTDA9808T-1 | R | TDA9808T | AR |

### TRANSISTORS

| | | | | |
|---|---|---|---|---|
| Q2301 | VS2SD601A//-1 | R | 2SD601A | AC |
| Q2302 | VS2SC2735//1E | R | 2SC2735 | AC |
| Q2303 | VS2SC2735//1E | R | 2SC2735 | AC |

### PACKAGED CIRCUIT

| | | | | |
|---|---|---|---|---|
| X2301 | RCRSB0038PEZZ | R | Crystal | AK |

### COILS AND FILTER

| | | | | |
|---|---|---|---|---|
| L2340 | VP-XF220K0000 | R | Peaking 22µH | AB |
| L2341 | VP-XF1R2K0000 | R | Peaking 1.2µH | AB |
| SF2300 | RFiLC0016PEZZ | R | S.A.W Filter | AS |
| T2300 | RCiLD0231CEZZ | R | Detection Coil | AF |

### CAPACITORS

| | | | | | | |
|---|---|---|---|---|---|---|
| C2301 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C2302 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C2306 | VCFYFA1HA474J | R | 0.47 | 50V | Mylar | AC |
| C2308 | VCKYCY1HB681K | R | 680p | 50V | Ceramic | AA |
| C2311 | VCKYCY1HB681K | R | 680p | 50V | Ceramic | AA |
| C2316 | VCCCCY1HH470J | R | 47p | 50V | Ceramic | AA |
| C2318 | VCFYFA1HA474J | R | 0.47 | 50V | Mylar | AC |
| C2319 | VCFYFA1HA474J | R | 0.47 | 50V | Mylar | AC |
| C2320 | VCFYFA1HA474J | R | 0.47 | 50V | Mylar | AC |
| C2321 | VCFYFA1HA474J | R | 0.47 | 50V | Mylar | AC |
| C2322 | VCFYFA1HA474J | R | 0.47 | 50V | Mylar | AC |
| C2323 | VCEA0A1CW107M | R | 100 | 16V | Electrolytic | AC |
| C2325 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C2326 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C2327 | VCEA0A1CW476M | R | 47 | 16V | Electrolytic | AB |
| C2329 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C2330 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C2331 | VCKYCY1HB332K | R | 3300p | 50V | Ceramic | AA |
| C2332 | VCKYCY1HB332K | R | 3300p | 50V | Ceramic | AA |
| C2333 | VCKYCY1HB472K | R | 4700p | 50V | Ceramic | AA |
| C2340 | VCEA0A1HW224M | R | 0.22 | 50V | Electrolytic | AB |
| C2341 | VCEA0A1HW104M | R | 0.1 | 50V | Electrolytic | AB |
| C2342 | VCEA0A1CW226M | R | 22 | 16V | Electrolytic | AB |

| Ref. No. | Part No. | ★ | Description | | | Code |
|---|---|---|---|---|---|---|

## PWB-D DUNTK9668FMV8 (SX68KF7) IGR UNIT (Continued)

| | | | | | | |
|---|---|---|---|---|---|---|
| C2343 | VCE9GA1HW105M | R | 1.0 | 50V | Elect. (N.P) | AB |
| C2344 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C2345 | VCCCCY1HH330J | R | 33p | 50V | Ceramic | AA |
| C2346 | VCCCCY1HH330J | R | 33p | 50V | Ceramic | AA |
| C2348 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C2349 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C2350 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C2351 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C2352 | VCEA0A1CW476M | R | 47 | 16V | Electrolytic | AB |
| C2353 | VCFYFA1HA124J | R | 0.12 | 50V | Mylar | AC |
| C2354 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C2356 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C2357 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C2358 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C2359 | VCEA0A1CW106M | R | 10 | 16V | Electrolytic | AB |
| C2360 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C2361 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C2362 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C2363 | VCKYCY1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C2364 | VCFYFA1HA474J | R | 0.47 | 50V | Mylar | AC |

### RESISTORS

| | | | | | | |
|---|---|---|---|---|---|---|
| RJ2300 | VRS-CY1JF000J | R | 0 | 1/16W | Metal Oxide | AA |
| RJ2301 | VRS-CY1JF000J | R | 0 | 1/16W | Metal Oxide | AA |
| RJ2302 | VRS-CY1JF000J | R | 0 | 1/16W | Metal Oxide | AA |
| RJ2303 | VRS-CY1JF000J | R | 0 | 1/16W | Metal Oxide | AA |
| RJ2304 | VRS-CY1JF000J | R | 0 | 1/16W | Metal Oxide | AA |
| RJ2306 | VRS-CY1JF000J | R | 0 | 1/16W | Metal Oxide | AA |
| RJ2307 | VRS-CY1JF000J | R | 0 | 1/16W | Metal Oxide | AA |
| RJ2313 | VRS-CY1JF000J | R | 0 | 1/16W | Metal Oxide | AA |
| RJ2317 | VRS-CY1JF000J | R | 0 | 1/16W | Metal Oxide | AA |
| RJ2325 | VRS-CY1JF000J | R | 0 | 1/16W | Metal Oxide | AA |
| RJ2326 | VRS-CY1JF000J | R | 0 | 1/16W | Metal Oxide | AA |
| R2306 | VRS-CY1JF562J | R | 5.6k | 1/16W | Metal Oxide | AA |
| R2311 | VRS-CY1JF102J | R | 1.0k | 1/16W | Metal Oxide | AA |
| R2313 | VRD-RA2BE101J | R | 100 | 1/8W | Carbon | AB |
| R2314 | VRD-RA2BE101J | R | 100 | 1/8W | Carbon | AB |
| R2316 | VRS-CY1JF222J | R | 2.2k | 1/16W | Metal Oxide | AA |
| R2318 | VRS-CY1JF222J | R | 2.2k | 1/16W | Metal Oxide | AA |
| R2321 | VRS-CY1JF562J | R | 5.6k | 1/16W | Metal Oxide | AA |
| R2329 | VRS-CY1JF332J | R | 3.3k | 1/16W | Metal Oxide | AA |
| R2340 | VRS-CY1JF223J | R | 22k | 1/16W | Metal Oxide | AA |
| R2341 | VRS-CY1JF181J | R | 180 | 1/16W | Metal Oxide | AA |
| R2342 | VRS-CY1JF183J | R | 18k | 1/16W | Metal Oxide | AA |
| R2343 | VRS-CY1JF561J | R | 560 | 1/16W | Metal Oxide | AA |
| R2344 | VRS-CY1JF102J | R | 1.0k | 1/16W | Metal Oxide | AA |
| R2345 | VRS-CY1JF183J | R | 18k | 1/16W | Metal Oxide | AA |
| R2346 | VRS-CY1JF102J | R | 1.0k | 1/16W | Metal Oxide | AA |
| R2348 | VRS-CY1JF221J | R | 220 | 1/16W | Metal Oxide | AA |
| R2349 | VRS-CY1JF393J | R | 39k | 1/16W | Metal Oxide | AA |
| R2350 | VRS-CY1JF152J | R | 1.5k | 1/16W | Metal Oxide | AA |
| R2351 | VRS-CY1JF102J | R | 1.0k | 1/16W | Metal Oxide | AA |
| R2352 | VRS-CY1JF823J | R | 82k | 1/16W | Metal Oxide | AA |
| R2353 | VRS-CY1JF823J | R | 82k | 1/16W | Metal Oxide | AA |
| R2354 | VRS-CY1JF225J | R | 2.2M | 1/16W | Metal Oxide | AA |
| R2355 | VRS-CY1JF101J | R | 100 | 1/16W | Metal Oxide | AA |
| R2356 | VRS-CY1JF102J | R | 1.0k | 1/16W | Metal Oxide | AA |
| R2357 | VRS-CY1JF122J | R | 1.2k | 1/16W | Metal Oxide | AA |
| R2358 | VRS-CY1JF392J | R | 3.9k | 1/16W | Metal Oxide | AA |
| R2359 | VRS-CY1JF151J | R | 150 | 1/16W | Metal Oxide | AA |
| R2361 | VRS-CY1JF122J | R | 1.2k | 1/16W | Metal Oxide | AA |
| R2362 | VRS-CY1JF122J | R | 1.2k | 1/16W | Metal Oxide | AA |

### MISCELLANEOUS PARTS

| | | | | |
|---|---|---|---|---|
| FB2302 | RBLN-0062TAZZ | R | Ferrite Bead | AB |
| FB2303 | RBLN-0067CEZZ | R | Ferrite Bead | AC |
| FB2304 | RBLN-0067CEZZ | R | Ferrite Bead | AC |
| P2300 | QPLGZ0610CEZZ | R | Plug, 6-pin(N) | AB |
| P2301 | QPLGZ0810CEZZ | R | Plug, 8-pin(M) | AD |
| SLD2301 | PSLDM0260PEFW | R | Shield | AD |
| SLD2302 | PSLDM0261PEFW | R | Shield | AC |

| Ref. No. | Part No. | ★ | Description | | | Code |
|---|---|---|---|---|---|---|

## PWB-E DUNTKA124WEV0 OPERATION UNIT

### TRANSISTORS

| | | | | |
|---|---|---|---|---|
| Q1200 | VS2SC3198-Y-1 | R | 2SC3198-Y | AA |
| Q1201 | VS2SC3198-Y-1 | R | 2SC3198-Y | AA |
| Q1202 | VS2SA1266-Y-1 | R | 2SA1266-Y | AA |
| Q1203 | VS2SA1266-Y-1 | R | 2SA1266-Y | AA |
| Q1205 | VS2SA1266-Y-1 | R | 2SA1266-Y | AA |

### DIODES

| | | | | |
|---|---|---|---|---|
| D1200 | RH-PX0414CEZZ | R | LED, POWER ON/OFF | AE |
| D1201 | RH-PX0274CEZZ | R | LED, ON TIMER | AC |
| D1202 | RH-PX0274CEZZ | R | LED, SAVE | AC |
| ⚠ VA3700 | RH-VX0048CEZZ | R | Varistor | AE |

### COIL

| | | | | |
|---|---|---|---|---|
| ⚠ L3700 | RCiLF0365CEZZ | R | Coil | AF |

### CAPACITORS

| | | | | | | |
|---|---|---|---|---|---|---|
| C1200 | VCKYPA1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C1201 | VCEA0A0JW107M | R | 100 | 6.3V | Electrolytic | AB |
| C1202 | VCKYPA1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| C1204 | VCKYPA1HB102K | R | 1000p | 50V | Ceramic | AA |
| C1205 | VCKYPA1HB102K | R | 1000p | 50V | Ceramic | AA |
| C1207 | VCKYPA1HF103Z | R | 0.01 | 50V | Ceramic | AA |
| ⚠ C3700 | RC-FZ012SGEZZ | R | 0.22 | AC250V | Polypro Film | AE |

### RESISTORS

| | | | | | | |
|---|---|---|---|---|---|---|
| R1200 | VRD-RA2BE471J | R | 470 | 1/8W | Carbon | AA |
| R1201 | VRD-RA2BE472J | R | 4.7k | 1/8W | Carbon | AA |
| R1202 | VRD-RA2BE103J | R | 10k | 1/8W | Carbon | AA |
| R1203 | VRD-RA2BE471J | R | 470 | 1/8W | Carbon | AA |
| R1204 | VRD-RA2BE103J | R | 10k | 1/8W | Carbon | AA |
| R1205 | VRD-RA2BE472J | R | 4.7k | 1/8W | Carbon | AA |
| R1206 | VRD-RA2BE473J | R | 47k | 1/8W | Carbon | AA |
| R1207 | VRD-RA2BE472J | R | 4.7k | 1/8W | Carbon | AA |
| R1208 | VRD-RA2BE821J | R | 820 | 1/8W | Carbon | AA |
| R1209 | VRD-RA2BE473J | R | 47k | 1/8W | Carbon | AA |
| R1210 | VRD-RA2BE472J | R | 4.7k | 1/8W | Carbon | AA |
| R1211 | VRD-RA2BE821J | R | 820 | 1/8W | Carbon | AA |
| R1212 | VRD-RA2BE103J | R | 10k | 1/8W | Carbon | AA |
| R1213 | VRD-RA2BE101J | R | 100 | 1/8W | Carbon | AB |
| R1214 | VRD-RA2BE101J | R | 100 | 1/8W | Carbon | AB |
| R1218 | VRD-RA2BE562J | R | 5.6k | 1/8W | Carbon | AA |
| R1219 | VRD-RA2BE101J | R | 100 | 1/8W | Carbon | AB |
| R1220 | VRD-RA2BE102J | R | 1.0k | 1/8W | Carbon | AA |
| R1221 | VRD-RA2BE101J | R | 100 | 1/8W | Carbon | AB |
| R1222 | VRD-RA2BE222J | R | 2.2k | 1/8W | Carbon | AA |
| R1223 | VRD-RA2BE472J | R | 4.7k | 1/8W | Carbon | AA |
| R1224 | VRD-RA2BE822J | R | 8.2k | 1/8W | Carbon | AA |
| R1225 | VRD-RA2BE273J | R | 27k | 1/8W | Carbon | AA |
| R1227 | VRD-RA2BE273J | R | 27k | 1/8W | Carbon | AA |
| R1228 | VRD-RA2BE101J | R | 100 | 1/8W | Carbon | AB |
| R1229 | VRD-RA2BE223J | R | 22k | 1/8W | Carbon | AA |
| R1230 | VRD-RA2BE151J | R | 150 | 1/8W | Carbon | AA |
| R1231 | VRD-RA2BE102J | R | 1.0k | 1/8W | Carbon | AA |
| R1232 | VRD-RA2BE102J | R | 1.0k | 1/8W | Carbon | AA |
| R1233 | VRD-RA2BE102J | R | 1.0k | 1/8W | Carbon | AA |
| R1250 | VRD-RA2BE101J | R | 100 | 1/8W | Carbon | AB |

### SWITCHES

| | | | | |
|---|---|---|---|---|
| S1200 | QSW-K0079GEZZ | R | CH-Up | AB |
| S1201 | QSW-K0079GEZZ | R | CH-Down | AB |
| S1202 | QSW-K0079GEZZ | R | VOL-Up | AB |
| S1203 | QSW-K0079GEZZ | R | VOL-Down | AB |
| S1204 | QSW-K0079GEZZ | R | Preset | AB |
| ⚠ S3700 | QSW-P0591CEZZ | R | Main Power | AQ |

### MISCELLANEOUS PARTS

| | | | | |
|---|---|---|---|---|
| ⚠ F3700 | QFS-C5022CEZZ | R | Fuse, T5A/250V | AD |
| FH3700 | QFSHD1017CEZZ | R | Fuse Holder | AC |
| FH3701 | QFSHD1018CEZZ | R | Fuse Holder | AC |
| J1200 | QTANJ0335CEZZ | R | Front A/V Terminal | AG |
| J1201 | QJAKJ0047CEZZ | R | Jack, Headphone | AD |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| **PWB-E** | **DUNTKA124WEV0 OPERATION UNIT (Continued)** | | | |
| P3700 | QPLGN0360CEZZ | R | Plug, 3-pin(AC) | AC |
| P3701 | QPLGN0269GEZZ | R | Plug, 2-pin(A) | AB |
| SC1200 | QSOCN1895REZZ | R | Socket, 18-pin(RC) | AC |
| SC1201 | QTiPM0083CEZZ | R | Tip(L3) | AB |
| RMC1200 | RRMCU0235CEZZ | R | R/C Receiver | AK |
| | LHLDP1056PE00 | R | Holder | AC |

## MISCELLANEOUS PARTS

| | | | | |
|---|---|---|---|---|
| ⚠ | QACCL3025CESA | R | AC Cord | AR |
| SP1 | VSP1208PB326A | R | Speaker | AU |
| SP2 | VSP1208PB326A | R | Speaker | AU |
| | GBOXS0011PE00 | R | Speaker Box | AG |
| | PSPAG0031PEZZ | R | Spacer | AD |
| | XTASD40P16000 | R | Screw | AA |
| | QCNW-2527PEZZ | R | Connecting Cord | AF |
| | QCNW-2528PEZZ | R | Connecting Cord | AF |
| | QCNW-2529PEZZ | R | Connecting Cord | AE |
| | QCNW-2530PEZZ | R | Connecting Cord | AD |
| | QCNW-2539PEZZ | R | Connecting Cord | AG |
| | QCNW-2543PEZZ | R | Connecting Cord | AC |
| | TCAUA0002PEZZ | R | Caution Card | AB |
| | LCHSM0113PEK0 | R | Chassis Frame | AQ |
| | LHLDK0024PEZZ | R | AC Cord Holder | AC |

## SUPPLIED ACCESSORIES

| | | | | |
|---|---|---|---|---|
| | TGAN-0068PEZZ | R | Guarantee Card | AE |
| | TiNS-7065PEZZ | R | Operation Manual (SX68KF7) | AF |
| | TiNS-7173PEZZ | R | Operation Manual (CX68KF5) | AG |
| | RRMCG1570PESA | R | Infrared R/C Unit (SX68KF7) | AP |
| | RRMCG1571PESA | R | Infrared R/C Unit (CX68KF5) | AP |

## PACKING PARTS
### *(NOT REPLACEMENT ITEM)*

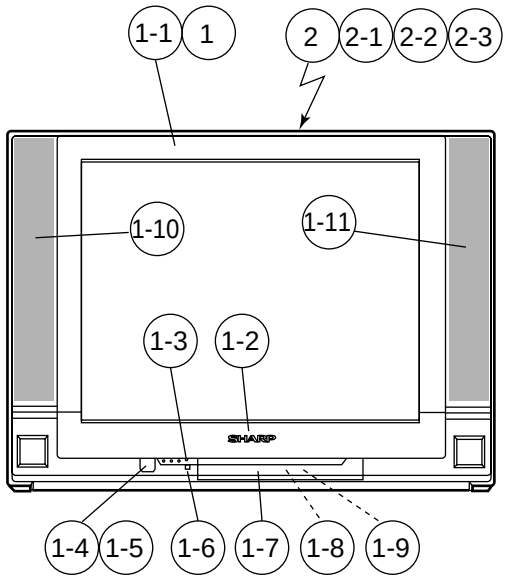
| | | | | |
|---|---|---|---|---|
| | SPAKC6698PEZZ | – | Packing Case (CX68KF5) | — |
| | SPAKC6657PEZZ | – | Packing Case (SX68KF7) | — |
| | SPAKX2751PEZZ | – | Buffer Material | — |
| | SPAKP0083PEZZ | – | Wrapping Paper | — |
| | SSAKA0002PEZZ | – | Polyethylene Bag | — |
| | TLABK0002PEZZ | – | Serial No. Label | — |
| | TLABN0001PEZZ | – | No. Label | — |
| | TLABV0341PEZZ | – | Barcode Label | — |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|

## CABINET PARTS

| | | | | |
|---|---|---|---|---|
| 1 | CCABA2583WEV0 | R | Front Cabinet Ass'y (SX68KF7) | BR |
| 1 | CCABA2634WEV0 | R | Front Cabinet Ass'y (CX68KF5) | BR |
| 1-1 | *Not Available* | – | Front Cabinet | — |
| 1-2 | HBDGB3141CESA | R | Badge, "SHARP" | AG |
| 1-3 | HDECQ0167PESA | R | LED Decoration Panel | AD |
| 1-4 | JBTN-0337PESA | R | Button, Power | AG |
| 1-5 | MSPRC0005PEFW | R | Spring, for Power Button | AB |
| 1-6 | GCOVA0128PESA | R | Cover, LED/R/C | AD |
| 1-7 | GDORF0185PESA | R | Door | AN |
| 1-8 | PKAi-0007PE00 | R | Door Latch | AE |
| 1-9 | HiNDP0264PEZZ | R | Indication Plate | AE |
| 1-10 | HDECQ0165PESA | R | Speaker Panel, Left | AP |
| 1-11 | HDECQ0166PESA | R | Speaker Panel, Right | AP |
| 2 | CCABB2425WEV0 | R | Rear Cabinet Ass'y | BF |
| 2-1 | *Not Available* | – | Rear Cabinet | — |
| 2-2 | HiNDP0265PEZZ | R | Rear AV Jack Indication Plate | AF |
| 2-3 | TLABM1694PEZZ | R | Model Label (SX68KF7) | AD |
| 2-3 | TLABM1753PEZZ | R | Model Label (CX68KF5) | AC |

## CABINET PARTS LOCATION



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